

American journal of

CLINICAL MEDICINE AND SURGERY

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VOLUME XXXVIII, 1931



PUBLISHED BY

The American Journal of
Clinical Medicine

NORTH CHICAGO, ILLINOIS

1718

Medical Library

PROGRESS NUMBER

January, 1931

JAN 7 1931

Clinical Medicine and Surgery

Volume 38

Number 1

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Dr. Ray Lyman Wilbur
Grist

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New Viewpoints in Bacteriology

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RAY LYMAN WILBUR, A.M., M.D. LL.D. Sc.D.
SECRETARY OF THE INTERIOR

CLINICAL MEDICINE AND SURGERY

VOLUME 38

JANUARY, 1931

NUMBER 1

Dr. Ray Lyman Wilbur

IT SEEMS to have become rather fashionable recently to have a physician in the Cabinet, as the present Secretary of the Interior is the second medical man and the second past-president of the American Medical Association to hold that position within the past decade, the former incumbent having been Dr. Hubert Work, who has proved himself a capable all-around politician.

Iowa became the native state and Boonesboro the native village of Ray Lyman Wilbur on April 13, 1875. His middle name is his mother's patronymic.

When he was ready for college he went further west and received his academic degrees (A.B. and A.M.) from Stanford University, where he was instructor in physiology in 1896 and 97, and his Doctorate in Medicine from Cooper Medical College, San Francisco, in 1899, after which he immediately became lecturer and demonstrator in physiology at that institution, and the next year was made assistant professor in the same department.

Not content to be simply a teacher, Dr. Wilbur spent five years in general practice before returning to his academic labors as professor of medicine at Stanford University, in 1909. In 1911 he was also made dean of the Medical School and, in

1916, became president of the University.

Some men are peculiarly equipped to be leaders of men and directors of human thought, and anyone familiar with Dr. Wilbur's salient features and commanding presence would easily recognize him as one of these.

When we entered the War, he was made chief of the conservation division of the Food Administration (where his close association with Hoover began) and a member of the California State Council of Defense, and, as time went on, accumulated various other important duties and responsibilities. Since 1923 he has been a trustee of the Rockefeller Foundation, and in 1924 was chairman of the medical council of the U. S. Veterans' Bureau.

Various institutions of learning have recognized his abilities by conferring degrees upon him. The Universities of Arizona, California and Pennsylvania have given him the LL.D. and the University of Syracuse the Sc.D.

He is a fellow of the American Association for the Advancement of Science; past-president of the American Academy of Medicine (1912-1913), the California Academy of Medicine (1917-18), the American Medical Association (1923-24) and the Association of American Medical

Colleges (1924-25). He has also been prominent in the work of the Council of Medical Education and Hospitals of the A.M.A. and is chairman of the important Committee on the Costs of Medical Care.

With his remarkable experience in the conduct of national affairs and his wide acquaintance with outstanding men and policies, including his service with Mr. Hoover, he was a logical choice for a Cabinet portfolio when his former chief became President, and the inescapable choice for the chairmanship of the White House Conference on Child Health and Protection, which met in Washington in November, 1930, to hear the report of the research work in which the committees had spent more than a year.

Here is a real physician who possesses such powers and endowments that he has overflowed the bounds of his profession and spread out over the field of our national life.

In person he is very tall and rugged, with massive, prominent features, a deeply lined face and piercing, observant and humorous eyes. His appearance reminds one very decidedly of Lincoln (without the beard). He is a powerful, clever and convincing speaker, who always has something to say.

One will watch with great interest the future career of this man who, though just coming into the prime of life, has received most of the honors (and responsibilities) which his confreres in the academic and professional world can confer upon him and has discharged large national duties with the skill and perception which mark the statesman.

A good citizen is one who can take care of himself and has something left over for the common welfare.
—Dr. William A. White.

GRIST

THE POETS have been wont to symbolize time as a stream, rushing swiftly and tempestuously through the boulder-strewn valleys of strong emotion or between

the beetling cliffs of concentrated attention, or loitering lazily, sometimes forming stagnant pools, in the flat and monotonous fields of uninviting routine.

Upon the banks of this stream we are figured as sitting, angling for the flotsam and jetsam that floats upon its surface, wherewith to build us our houses of life.

Lorado Taft saw another vision when he erected his heroic sculpture, "The Fountain of Time," which was conceived, more soundly one believes, upon the thesis, "Time stays; we go."

But whether we are sitters upon the banks, or are, ourselves, the banks, past which the river thunders or runs sluggishly, one thing is certain; that, oriented in time as we now are, a constant stream of events flows through those water-mills which we call our personalities, grinding whatever grist we furnish, to make the pabulum upon which our souls must feed.

Some provide nothing but oddments of vague and undirected thoughts and vacuous or foolish fancies, the product of which is as tasteless and innutritious as sawdust.

Others cram into the hopper a mass of the reeking, moldy and poisonous garbage of hate, fear, ill-will, envy, gossip, jealousy and meaningless obscenities, which fills the emptiness of a lazy brain and a pointless life. He who subsists upon the foul porridge from such a grinding will be a prey to intellectual indigestion and spiritual toxemia.

Still others there be who bring good grain, sound and firm—constant busyness about worthy matters; governed thoughts directed to a clearly-perceived end; love and joyous service to all; laughter and the handclaps of friends. These find the current of events grinding out from the mills of their personalities clean and fragrant meal, sweet and bright, fit to nourish the soul into the stature of manhood and that robustness which we call happiness.

The beginning of a new calendar year is a good time (no better, perhaps, than any

other, for a new year begins each day; but certainly no worse) to untie our sacks and spill out what they hold into the sunlight, where we may see whether our corn is becoming smutty or worm-eaten or if, perchance, there may be mingled with it too high a percentage of dead leaves and stones or, mayhap, a family of field-mice.

If the grist we are taking to mill is not savory and satisfying, what shall we do to improve its quality and enlarge its quantity?

For one thing, we can fill odd minutes with reading—not trash, to kill time, any more than we would ride on a street car to kill time, but with a sincere desire to arrive somewhere and a knowledge of how to get there, just as we use the street car.

When reading is not practicable, we will then have stored among those portions of the mind's contents which we call the subconscious, a large assortment of interesting things which we can turn over and study in periods of meditation.

A curious faculty inheres in the things stored among our subconscious possessions. They mate and beget offspring, so that, when we look among them we are like a sheep-herder who goes out to his field in the morning, to find that his ewes have dropped a score of lambs during the night. Under such circumstances, the thrifty shepherd immediately places his mark upon the new lambs which he has found, lest they stray away and become lost to him.

With equal thrift, it behooves us, when we find some newcomers among our subconscious cattle, to tag them in such a way that they shall not escape us. This we can do, when a new idea pokes its head out, by jotting it down in the notebook which every serious thinker carries with him at all times. If these marked lambs are then herded into corrals of subjects or alphabetic categories, they will be easier to find when wanted; but, if that seems too much effort, no matter. Chuck them into a drawer or pigeon-hole somewhere, for the time being, but be sure to

parade them for inspection at rather frequent intervals, to ascertain whether or not there have been further additions to the family since last the census was taken.

The results of even a short period of such idea-husbandry will surprise those who have not tried it. During short periods of time which would otherwise lie fallow or grow a precocious crop of noxious weeds, such as when waiting for a train or dinner or an appointment with a woman, instead of finding the hopper full of unkindly thoughts about a neighbor or worries about taxes or the amount and quantity of synthetic gin Junior is drinking, a procession of these well-trained intellectual lambs will promptly march forth and may frequently be sheared of a fleece of thought that will make one's next interview or speech or letter or article far more profitable and pleasant than it would otherwise have been.

This is an inextricable tangle of milling and sheep raising and corn and lambs and so on, but the nub of the whole matter is: read a great deal and *with a purpose*; spend twice as much time in *thinking* about what you have read; and keep your iron hot at all times, to put your brand on any new additions to the flock of ideas in your mental sheep shed.

If we put the lambs into the hopper and grind them we shall, of course, have *Wiener Schnitzel*; but cultivate nimbleness! We have hopped back to our first metaphor again, according to which, the process just outlined in such a heterogeneous manner will furnish anyone with a constant supply of grist to be ground at odd moments when, otherwise, the hopper would be empty, or might become clogged with old bones, sticks or offal which, when ground, might make the whole batch of meal unpalatable, indigestible or possibly dangerous to mental health and happiness.

Success is built upon continuity of effort, rather than upon degree of effort.—Dr. William Allanson White.

Progress in the Science and Art of Medicine — 1930

NO EXCUSE is needed for the presentation, at the beginning of the year, of a brief resume of the things which have been done in Medicine during the past twelve months. Those whose memories are not at once refreshed by the brief mention here made of a number of matters, can readily obtain fuller information by consulting the pages of CLINICAL MEDICINE AND SURGERY or other readily available journals.

GENERAL RESEARCH

It seems possible that the establishment of the National Institute of Health may prove, in the long run, to be the outstanding occurrence in Medicine during the past year. The White House Conference on Child Health and Protection also may (or may not) have far-reaching consequences.

The clinical application of the synthetic analogs of chaulmoogric acid (worked out by Prof. Roger Adams, of the University of Illinois), in the treatment of leprosy, and the isolation of a crystalline female sex hormone, *Theelin* (first exhibited at the A.M.A. meeting in June, 1930), by Prof. A. E. Doisy, of St. Louis University, are important developments of the past year, although the laboratory work has been going on for some time.

With the practically simultaneous announcement by Dochez and his associates, of New York, and by Long and Doull, of Johns Hopkins University, that the "common cold" is caused by an ultramicroscopic, filter-passing virus, which acts of itself and also increases the activity of other pathogenic bacteria which may be present in the upper respiratory passages, we seem to have taken the first real step toward the eradication of this well-nigh universal scourge of humanity.

The accepted views in bacteriology, physiology and physiologic chemistry have received several shocks during the year.

Calmette's declaration that the tubercle bacillus has a *life cycle*, comprehending at least three quite dissimilar forms, coming not long after McDonagh's similar announcement regarding the spirochete of syphilis, makes us wonder how much (or how little) we really know about the life history and physiology of the pathogenic microorganisms.

Alvarez has shaken many established conceptions by declaring that the colon and rectum can absorb little else than water; that the nerve supply of the digestive tract is highly autonomous, the vagus and splanchnic impulses being largely supplementary, rather than essential; that vagotonia and sympathicotonia are probably mythical conditions; and that hormones may have hitherto unsuspected powers, as witnessed by *cholecystokinin*, parenteral injection of which causes contractions of the gallbladder. He may or may not be right, but he sets us to thinking and observing.

The pioneer work done by Hartwell and Hognet, in 1912, has borne fruit in the announcement by White and Fender, in 1930, of their conviction that the alarming symptoms of non-strangulating intestinal obstruction are caused by *dechlorination and dehydration*, rather than by toxemia, and can be relieved by copious parenteral injections of isotonic saline solution.

The widely heralded treatment of cancer with a preparation from the adrenal cortex, announced by Coffey and Humber, has wholly failed to convince other workers in this field, and some pertinent questions have been raised as to the validity of the work of these gentlemen. On the other hand, this hormone has large powers and possibilities, as is shown by Harrower's article in this issue.

Study of the normal and pathologic activities of the ultramicroscopic protein par-

ticles in the blood serum and leukocytes, as well as of certain little-considered physical and chemical changes in the blood, according to the ideas of J. E. R. McDonagh, is gaining ground. These matters are discussed by Wright, on another page.

Adson and Brown's work on *sympathetic ganglionectomy*, in the treatment of Raynaud's disease and certain forms of arthritis; and L. Bruce Robertson's development of *exsanguination-transfusion* in the management of infants suffering from profound septicemias and toxemias (such as that following extensive burns), are sufficiently new to warrant mention in this place.

Strong efforts are being put forth by health authorities to secure the **vaccination** of all infants, against smallpox and diphtheria, before they reach the age of one year. The universal application of these vaccines and their harmlessness are now certain. Diphtheria *toxoid* bids fair to replace the toxin-antitoxin within a few years; and Prof. Löwenstein's prophylactic *ointment*, now being used experimentally, may later take the place of the toxoid. Other vaccinations (against typhoid, scarlatina, measles, tetanus, etc.) are recommended only under special conditions.

The use of still and motion photography, in black-and-white and in colors, with or without sound recording, grows steadily, with the development of more efficient apparatus and the discovery of new applications for such recording.

DIAGNOSIS

The most important advance in diagnosis during the past year is probably the demonstration, by Binz, Râth, Swick and others, of the possibility of making satisfactory pyelograms after the intravenous injection of the complex, iodine-carrying, synthetic chemical known as *Uroselectan*. This should open up new fields in urography.

Researches toward the discovery of a specific stain for cancer cells have been

going on in Bloodgood's laboratory at Johns Hopkins University, and while the goal has not yet been reached, Geschichter has discovered a remarkable new, single-solution tissue dye, which will stain a frozen section in such a manner that it can be mounted permanently, and possesses other desirable properties.

The diagnostic and therapeutic researches, in connection with anesthetizing the *sphenopalatine ganglia*, which appeared to be about to bear important fruit, have received a temporary check by the untimely death of Dr. Hiram Byrd, of Detroit, who was conducting them. The work, however, seems so significant that someone will, no doubt, soon undertake to carry it on.

The French journals have announced the invention of a *rectophotor* (similar in principle to the gastrophotor, which was described in this journal in December, 1929), for the study and recording of lesions of the lumen of the rectum.

THERAPEUTICS

Intravenous and rectal anesthesia, by the use of barbituric acid derivatives, and the preoperative and obstetric use of these drugs for producing sedation and amnesia, seem to overshadow most of the other recent therapeutic developments. The newest and most satisfactory offerings in this line are *Nembutal* and *Pernocton* (a German product), for intravenous and oral administration (though *Amytal* is still widely used), and *Avertin*, for use in the rectum. The intravenous injections of such drugs appear, however, to be pushing the last-named into the background.

Besredka's antiviruses are gaining in popularity as new strains are being placed on the market, and their use is being extended by applying them *intradermally* and *topically* in the nose, with notable success, in the treatment of such conditions as nasal sinusitis. A great advantage of these biologic preparations is that they need not be kept in an ice-box. Corbus and O'Connor

have developed what they call a gonococcal bouillon filtrate, which resembles, but is not, an antiviral.

Predigested meat has been shown to be practically as effective as liver extract or ventriculin (hog's stomach) in the treatment of pernicious anemia. *Insulin*, in doses of 40 to 60 units daily, has also been reported, by von Varga, as being beneficial in these cases.

The *ketogenic diet* is now rather generally accepted as part of the standard treatment of the epilepsies, especially in children.

C. C. Bass states, categorically, that the cinchona alkaloids, especially quinine, are the only specific remedies for malaria, other recommended drugs having a non-specific effect.

In accordance with the recommendations of the laboratory and clinical research workers, the strength of all brands of *viosterol* has been more than doubled within the past year (from 100D to 250D), and that of all its compounds has been materially increased. This should result in increased therapeutic potency and a wider use of this valuable remedy. A new preparation of malt, containing effective quantities of vitamins A, B and D, has been added to the *viosterol*-containing list.

Vaccineurin, a non-specific autolysate of *B. prodigiosus* and a staphylococcus, is said to be producing interesting results (after the elimination of foci of infection) in obstinate cases of neuritis, sciatica and other painful nerve lesions.

PHYSICAL THERAPY

Little of profound moment seems to have developed recently in the field of physical therapy.

Increasing use is being made of physical methods (of which the high-frequency, electrostatic or radio-wave current is the newest, while diathermy appears to be the best), for the production of *therapeutic fever*.

Hydro-gymnastics is also in high favor

among those who have used the method reasonably extensively, for the treatment of the paralyses following anterior poliomyelitis and other lesions of the central nervous system.

It would appear that **Nembutal** (mentioned above) might well prove to be the ideal anesthetic (or sedative-amnesic) for use where the "radio knife" or other forms of electrosurgery are to be employed.

ECONOMICS

Fear (or, at least, conviction) seems to be growing, that some form of State Medicine is inevitable in the United States. If this is to come to pass, it becomes increasingly important that physicians should cooperate and hold up the hands of their organizations, to the end that the medical profession may have control of its own socialization. The concerted action will be highly beneficial, in any case.

The idea of arranging for the payment of medical fees in installments is gaining ground, and several companies have been organized recently for putting this idea into practice.

Internal dissension in the dental profession, between the "stomatologists" and the "autonomists," increases rather than declines. The time can not be far distant when a decision must be reached as to whether dentistry (or stomatology) is to be a specialty in Medicine, or is to continue in its present anomalous position as an independent profession.

Recent surveys show that professional pharmacy is gaining ground, as against the commercial "drug store." There is a place for both; but physicians should lend their cordial support to the professional pharmacists.

All in all, the year has been a fruitful one for medical progress, and it seems probable that some of the discoveries and developments of the past year will exert profound effects upon medical practice during the next decade, if physicians will work together, with open minds, to bring

the discoveries of science to the bedside, and the principles of modern economics into the consulting room, the hospital and the medical society.

To practice art without science constitutes charlatanism. To practice science without art is to disregard the personality of the individual who seeks relief.—Dr. James D. Heard.

NEW VIEWPOINTS IN BACTERIOLOGY

BEFORE the time of Pasteur, infectious diseases were considered as the mysterious chastisements of an inscrutable Deity, and little or no effort was made to combat them.

After the discovery of bacteria, the world went germ-crazy, and microorganisms were sought as the cause of every human infirmity, from pot-bellies to unrequited love. This era is passing, but is not yet completely over.

A couple of decades ago, the scientific world looked upon atoms as little hard, round bodies of homogenous and unalterable specific matter. Today the electronic hypothesis of the structure of the atom is almost universally accepted by the world of scientific thinkers.

As chemistry is far older than bacteriology, it is not strange that the former science is more highly developed than the latter, nor that we have been content to accept a static bacteriology, wherein the individual organisms remained always the same, like the atoms of our boyhood, and about whose history, structure and functions it seemed futile to inquire. A tubercle bacillus was a tubercle bacillus, and that was that!

Now, however, the old conception of bacteria seems to be trembling as the old idea of the atom trembled a few years ago. Perhaps the entering wedge was the discovery of what is now generally recognized as the pleomorphism of Vincent's spirillum, though there may have been some similar observation before that. Moreover, it has been recognized for some time that *Enta-*

meba hystolytica can exist in an active and a cystic condition; and the sporulation of certain bacteria is well known. We have recognized a rather complicated, bisexual life history of the malarial plasmodia, for a considerable time.

But now the citadel of our complacency is being bombarded from several points at once. J. E. R. McDonagh's remarkable book, "The Nature of Disease," was published in 1924, though many of his observations had seen the light earlier than that. His statements are of such an unusual nature as to be truly revolutionary, and having read even a part of that massive work, it is difficult to see how any open-minded man can sit back on his hunkers until McDonagh's hypotheses are either confirmed or refuted.

One of his most surprising statements, to orthodox bacteriologists, is his categorical declaration, backed up with many microphotographs and much logical reasoning, that the *Spirocheta pallida*, universally recognized as the specific organism of syphilis, is not the cause of the symptoms of that disease, but merely the adult male phase of a coccidial protozoon, and that the spore which results from the conjugation of the two sexual phases is the actual cause of syphilis.

From another direction came Calmette and his coworkers, announcing that the tubercle bacillus is not the simple bacterium we have long considered it to be, but that it, too, has a life cycle, one stage of which exists as an ultramicroscopic, filter-passing virus which, under proper conditions, can be observed to develop into cocciform granules and thence into the conventional, acid-fast bacilli with which we are all familiar. This thought upsets many preconceived ideas and opens the way for many and varied studies of this protean disease. Perhaps it has some bearing on Hollos' tuberculous intoxications.

In the field of bacterial functions, Besredka's studies in specific and localized tissue susceptibility and immunity have led

to indisputable clinical results from the local application of certain of his specific antiviruses, and may, perchance, upset the whole of Ehrlich's elaborate theory of immunity, which has been trembling under the assaults of the proponents (notably Ferguson) of Metchnikoff's idea that the phagocytes are the sole constantly demonstrable factor in immunity.

The fact that we need not stop at an unalterable and homogenous bacterium, any more than we stopped with the bullet-like atom of our fathers, is indicated by the matters already mentioned, and also by the work being done on d'Herelle's *bacteriophage* and by the fact that a gold medal

was recently (at the A. M. A. meeting in June) awarded to Dr. F. G. Novy and his associates, of the University of Michigan, for a presentation of methods and apparatus for studying the respiration and dissociation of microorganisms.

All in all, the old, static bacteriology appears to be slipping, all along the line, and physicians who aspire to be abreast of modern thought are in for some heavy reading and close observing of the periodical literature, lest they awake some morning and find themselves sitting by the side of the road, watching the tail end of the pageant of scientific progress vanish in the distance.



Photo by G. B. L.

... JANUARY ...

(Cinquains)

Last night
A snow storm turned
Fresh pages for the Earth.
The New Year gives me fresh pages,
Also—

Fresh leaves
Whereon I may
Write such things as seem good.
God grant what I write will bring me
No shame.

—G. B. L.

LEADING ARTICLES

Progress in Child Welfare*

(A Survey and A Challenge)

By RAY LYMAN WILBUR, M.D., Washington, D. C.

Secretary of the Interior

WE HAVE met in this White House Conference on Child Health and Protection in the hope that we could bring up the general level of child care to the point reached by the outposts of science and weighed social experience. We have had before us the reports of numerous committees representing the various fields of interest. These have been prepared in the finest spirit of service, by experienced and expert volunteers who have felt keenly their responsibility to the children and to the nation.

We all have a common aim, which is to prepare the American child physically, mentally and morally more fully to meet the responsibility of tomorrow than we have been able to meet that of today. We want to see our children develop into adult citizens with wholesome bodies and prepared minds, both under the control of a developed will operating in the atmosphere of what we call character.

We are conscious, in the work of the Conference and in our observations, that the emotional element in mankind must be harnessed by the intellect, or individual and mass decisions will be too variable for either individual happiness or mass safety. We want our future men and women to be self-starters and to operate under their own personal control, not people who follow the herd or develop an emotional storm when confronted by difficulties.

The development of seven pounds of cells and fluids, encased in the helpless frame of a baby, into a Mozart, a Newton,

or a Lincoln, is the one great marvel of human experience. But to each mother the development of her baby into a good, useful citizen is the one absorbing and vital experience of life. That development is taking place constantly about us, in millions of homes and in tens of millions of individuals. Our studies have shown us that there are perils on every hand for human beings, from the very first inception of life. We stand in awe as we watch this current of human life stream by us. Life is our only real possession. It is because of this that its preservation is constantly before us.

MODERN COMPLEXITY

Within the past few decades there has been a growing consciousness of the significance of childhood. In so far as organized forces were concerned, aside from those of the church, such responsibility as was assumed for children outside of the home was, in the beginning, largely based on what we have called charity. We have seen what was once charity change its nature under the broader term welfare, and those activities looked upon as welfare are now coming to be viewed merely as good community housekeeping. In a word, parental responsibility is moving outward to include community responsibility. Every child is *our* child. We have injected so many artificial conditions into our industrial civilization that the old normal relationships of mother and child, child and family, family and neighborhood, have been changed. There is now a much less direct struggle with nature and her immediate

*Address at the White House Conference on Child Health and Protection, November 21, 1936.

forces than has ever been the situation before in our country. We have softened this struggle for man by all forms of protection—better houses, better clothing, more and better food supplies, and by preventive medicine and sanitation in general. All of this has called for a delegation of functions, once performed by the individual in the home, to all sorts of outside dependencies.

The increased skills which we have acquired, due to applications of science and discovery, have given us exuberant results in agriculture and industry. These, with the vast resources of an attractive continent, have led to a marked increase in our population. As our mechanism has become more intricate, the need of the education and training of all our units, and also that of the special training of the expert for the different fields of activity becomes more and more evident. If we compare the mother of the past, who nursed her own child, with the one who now must rely largely on prepared foods, we find that between the mother and the child we have a whole series of persons and forces upon which the safety of the child depends—the inspectors of dairy herds, the inspectors of milk, the promptness of delivery systems, refrigeration, medical advice as to the mixing of formulas, the chlorination of water, the preparation of sugars and grains, etc. Each one of these new factors must operate well and must be in the hands of those who know the reasons for what they do. The indicators of failure to do any part of this task well are the little headstones in the cemetery.

Beyond babyhood we have substituted another whole series of organized services between the mother and her child and have replaced much of the home training of the child with these activities. We have brought in kindergartens, playgrounds and schools, under government or private auspices, where the time of the child is spent and where proper training is essential. We face the absolute necessity of making good in all of this, through expert service. It is probably true that it is beyond the capacity of the individual parent to train her child to fit into the intricate, interwoven, and interdependent social and economic system we have developed. Since we, as an organized people, have definitely taken on the responsibility, we can only make good in it by the use of those specially

trained and by having them work under the best experts we can discover.

IMPORTANCE OF SCHOOLS

The parent *plus* the community must be stronger than either the parent or the community alone. Sympathetic, mutual understanding of the division between them of the responsibility for the child must be the order of the day. We have come a long way from the days when boys in our country were "bound out" to neighbors for apprenticeship. We have deliberately prolonged the period of training of a large proportion of our citizens. We have compelled all elements of our population to attend our school. We throw each year an increasingly heavy burden upon these schools. Our problems and the future of our country are in the school rooms of America to-day. In them are the future presidents of our country, as well as the racketeers. Every one of the elements of our population-to-be is there right now—the future gamblers, the insane, the criminals, the prostitutes, as well as the business men and women, the lawyers, the physicians, the statesmen and the laborers of the future, and more significant than all, the mothers and the fathers of the days ahead.

We can now say that we have the problem surrounded. It is there in our school rooms. It is within the joint responsibility of the home and the community, operating in immediate contact with the child. How are we to meet the pressing difficulties before us in dealing with this great mass of forty-odd million children, sixteen million of whom are under the age of six? They are wholly ours to protect and fortify, because they are not yet old enough to have developed satisfactory resistance to disease, nor any degree of self-dependence.

I was deeply impressed, as a small boy, by a picture called "The Slaughter of the Innocents." It seemed to me to be beyond conception that anybody would want to kill a baby. Yet, through ignorance, neglect and other failures, our committees have shown us that we are still slaughtering the innocents, and sometimes their mothers, when it could be avoided. Our committees, too, have pointed out to us the difficulties that millions of our children have in the development of bodies and of character in the atmosphere of the city as it has been permitted to grow up. Our

industrial centers are just beginning to become aware that the little children of today will operate them in the future, and that our eyes must be raised from those balance sheets that we look at annually to measure our successes, to see the child and its needs as the real objective of a permanent social order. Our rural areas, in spite of their open spaces, show too high a degree of juvenile misbehavior, and those sad transitional blocks, where the old city is dying and the new one growing, give us clearly the effect of environment upon growing youth.

At the present time the declining birth rate gives us the prospect of a practically stationary number of children entering our schools; there is less immigration than at any previous period; we are more familiar than ever with the stocks making up our population, and a national program can be viewed with more facts in hand than ever before.

SCIENCE, NOT CULTS, NEEDED

In general, I think that we will agree that we must assist children in their own development, not "bring them up" as has been so often done in the past. We are, I think, convinced, too, that children should not be used at test-tubes for opinionated programs, with no worked-out basis of science or of fact, and that those who have developed plausible methods without scientific preparation are often of the greatest harm in the handling of our children. I think we are all more or less suspicious of those whose hearts impel them to "do good" to children, when their minds are untrained or are guided by fixed fantasies of the crank type.

Just as we have wisely applied the findings of science in other fields, so must we apply them for the benefit of our children. I think we will all agree that the health of our children is worth any price, and that, insofar as the community can do so, it should see to the environment of the child so that the water and food will be pure and there will be no unnecessary exposures to the microorganisms causing disease. Our knowledge of nutrition is complete enough and our food supply is ample, so that ill-nourished children are a community responsibility.

Life is a process that constantly progresses with increasing vigor up to a certain point, and then recedes at a diminished rate until we "go over the hill." The most

vital and valuable quality in the child is elasticity to meet the new and the unexpected. Early rigidity of the human mind, unconsciously developed at times, leads to most of our mass habits and our mass follies. There is a menace in our marshaled athletics, in our dominated recreations for all ages, in our yelling sections and our over-evident coaches. There is, too, much seeking out of special performers, and not enough play of personal initiative and juvenile leadership. Cooperation is requisite, team play necessary, but the coercion of the crowd is to be fought against, if we are to have safety and reasonable action in periods of strain. We need to fight the crystallizing effect of habit upon all of our methods of dealing with the child, particularly with regard to the school curriculum or with other procedures or methods of handling large groups. The machinery of our training program of all sorts for children must move at as rapid a rate as does the rest of our civilization.

IMPORTANCE OF VARIATIONS

One reason for this Conference is to bring us to a common understanding as to where we are in our program for children. One of the most striking facts of life is the diversity of human material. More significant still perhaps is the need of the development of that diversity in order to safeguard our civilization. While we more often think of the few outstanding geniuses of the race, we must remember that there are hundreds of thousands of individuals of preeminent ability in our population at all times. Many of these are serving us, but others, for lack of opportunity or lack of self-control or training or because of bad habits, the use of drugs or other ulterior influences, have been blighted. While we must seek out and open the way for those of superior capacity, we must also vigorously discard those artificial factors which often curtail full development. For all we must mold the environment about us with all of our children constantly in our minds.

The intelligent control of our human stock offers a fundamental solution of some of our present difficulties and gives promise of greater future for us as a people.

My sympathy goes out to the child who is facing the years ahead of us. It is not easy to get along with an active, restless mind, receiving new impressions

every hour. It is not easy to develop sound habits and sound attitudes in the presence of many diverse influences and varied associates. I imagine, too, that the modern parent, with his or her ideas regarding vitamins, cod-liver oil and conduct, is at times an undesirable associate, in the view of many of our children. Children, like the sick, respond to what they understand. More time in explanation often leads to less in correction for disobedience. My sympathy, too, goes out to the children whom we have classified as the handicapped—those who, in some way, are different from their fellows and yet hope to win in the game of life. It has been shown that these can be a great social asset to us and that there is much that can be done to make them more effective and happier.

We can not stop for a moment to argue with those who would dodge the responsibility of care for established human life. It is the supreme gift to us human beings and we must preserve it at all times. The wretched frame of a little body may have in it the brain and spirit of a Caesar, a Cicero, a Keats, a Washington, a Steinmetz, a Shelley, a Stevenson or a Roosevelt. It is not for us to foretell the potentialities of a baby.

My sympathy goes out even more to those little children whose normal motivation, unguided, has brought them into the domain of the court. If there is any field in which the word prevention should outweigh any other one, it is in this field, even though this prevention goes back to the very basic structure of our physical civilization. We can ill afford to save expense along this line.

This then covers in rapid fashion some of the different groves into which the major problems of this Conference fall. Restated they are: the problem of how to steady our children against the high-power impact of new forces which have developed in our modern civilization; of how to protect them physically and mentally to the utmost of our abilities and with the widest possible application of scientific knowledge; to extend and strengthen those community forces which stand to the child in the place of many of the earlier responsibilities of home and parents; to evaluate our school curriculum in the light of rapid changes in our social scheme, expanding their functions at those points

where the modern home is no longer equipped to train children; to find ways and means to strengthen the hands of parents through education, as rapidly as possible, equipping them with new knowledge concerning children as it develops; to discover the machinery by which the benefits of preventive medicine and sanitation, of community social and cultural agencies, can be extended to all children—in the country as well as the city—which too often now are enjoyed by the privileged few; and, in the midst of our crowding eagerness to help lift our children to higher levels, to guard them against our own over-zealous programing—to leave to them sufficiently wide margins of free time and free space for the great and joyous adventure of growing up as personalities operating under their own motive power.

THE CHALLENGE OF THE FUTURE

With all this that is now open before us, we have the challenge of the future. We find it, not only here in the United States, but also in Porto Rico, where the conditions for children are deplorable, and also in the Philippines.

What are we going to do to take advantage of the great opportunities offered by the findings of this Conference? I realize that this is a zone in which the art as well as the science of government must be considered. We have the information; we have a large program. How shall it be put into effect?

In the first place, it seems to me that we must force the problem back to the spot where the child is. This primarily means, and should mean, the home. Our function should be to help parents, not to replace them. The accessories which our civilization has brought for the care, protection and development of the child, should be accessories to the home, and not supplant it. The success of our civilization has come through the relationship of the home to children and consequently to citizenship. In other words, there must be a decentralization into the local field of the great mass of the problems which we have been studying. There must likewise be decentralization of the information which we have gathered, so that it will reach every mother and father, school board health officer and legislator in the country.

The great need for us to deal with in this Conference is that of getting the gist of our discussions back into action in the lives of children in this country—black and white, yellow and red, rich and poor, and all that lies between. Our deliberations, therefore, have two aspects; to make our facts and findings a true harvest of science and experience; and to develop the means of putting all we have brought together to work for the good of children.

Since a child is growing or developing all of the time, not just when he is at home or in the schoolroom, we must think in terms of playmates, radios, moving pictures, gangs, books and magazines, both good and bad, and all that the child sees in his environment, as a part of his training process. We have a foul nest to clean out in our vulgar, degraded marginal magazines, and need to bring drama and comedy back to serve again in the uplift, instead of the degradation, of our civilization.

We need to keep little hands busy; we need the discipline of accepted regular tasks; we need to permit our youth to receive a reward for their own efforts; but can we not so organize our affairs that these little hands can be kept out of the day-to-day operations of our industries?

By a study of vocational aptitudes and interests, from infancy on, we should be able to brighten the ordered life of the school child by appropriate opportunities, rather than to dull the edge of youth with the "has beens" of the past. We adults are full of outworn ideas and too inclined to think we are equal to the experts in the fields of education.

The superiority of the foreign worker to the American, in many branches of industry, among both men and women, lies in the fact that they have been trained from their early years in manual skills. Vocational training, beginning only a year or two in advance of youth's entry into his life's job, is like trying to develop a virtuoso with a correspondence course in music. Imagine the stupidity of those who are still compelling the boy with a real genius for mechanics, to learn the names of the wives of Henry VIII!

NECESSITY FOR LOCAL ORGANIZATION

America has become great in its social organization because of two coordinated operations: One is that of the volunteer agency, and the other is that of the gov-

ernment agency. In the field of child care, for decades, a whole series of volunteer agencies, such as the churches and welfare organizations of all sorts, have been operating. When these volunteer agencies have tested certain procedures and shown the desirability of giving them a wide spread, they have, in the course of decades and generations, been adopted by the government itself, so that we now have public schools and teachers, hospitals and health officers, and a growing number of government services directly for the children.

It seems to me that our greatest danger in trying to carry out the results of this Conference would be to have too scattered a program or to centralize it too much. Its safety will lie in its trial in the small units of the counties and the States. We must go back to the local unit for effective education in health or welfare work. *We want a minimum of national legislation in this field.** No one should get the idea that Uncle Sam is going to rock the baby to sleep!

There is, though, much that can be done through wise legislation in the securing of information, in the keeping of this information up to date, and in sending it out to all parts of the country as it is digested and understood. We can, too, provide examples and give stimulation in the early periods of local organization. It seems to me that this Conference offers a challenge to each of us, no matter where he may live or what he may be doing, to see that in his community our findings are understood and acted upon. I think there will come from it an increased range of activities for the schools and in public health. I think, too, that the forces of law will soon learn to use the expert in a dozen fields, in attempting to solve the problem of the child that has breached some statutory provision. I count it a major sin of our country that we permit immature boys and girls to be contained in the sordid pool of our confined criminals.

My experience has taught me to forgive almost anything that a growing youth may do, since maturity of viewpoint comes at different periods, with different people, and with maturity there comes to most of us a stability of outlook which can usually be depended upon. There is always hope that every child who is not intel-

*Italics are ours.—Ed.

lectually blighted can contribute some service to his country. In each, conscience and temptation struggle; in each there is the driving impulse towards decency, honesty and fair play. Even criminals shoot square with their kind. Providence has given an inner guiding light to all. Let us help so that this light may burn bright-

ly and not be stifled by a murky atmosphere of our own creating. Let us endeavor to see that every child, in every part of the country, gets that opportunity which is the best for him to grow into participating citizenship. By so doing, we insure the happiness of those who will follow us and the safety of our Republic.

The Adrenal Cortex Hormone and the Renaissance of Adrenal Therapy

By HENRY R. HARROWER, M.D., Glendale, California.

THE separation and standardization of a hormone from the adrenal cortex, accomplished in half a dozen laboratories during the last two or three years, have caused a revision of opinion regarding the adrenals in physiology. Particularly interesting are the first-fruits of this accomplishment in therapeutics. Apparently we have "another insulin," as some one put it the other day.

Let us recall the high points, and thus build a basis for the application of this idea in every-day practice.

In 1850 Addison showed that an exaggerated fatigue syndrome, accompanied by certain nutritional changes that ended fatally, was due to damage to the adrenal glands. It is now conceded that the majority of cases labelled Addison's disease are really a tuberculous degeneration of the adrenals. It is also conceded that cachexia, the asthenic toxemia that accompanies malignant growths, certain types of syphilis, and malignant malaria, is closely akin to the hypotensive wasting that is now being called *addisonism*.

The discovery of adrenalin, in 1901, with its remarkably active clinical effects, led to a huge misunderstanding that has caused many of the world's leading physiologists (Vincent, Gley, McLeod, Stewart, et al.) to judge adrenal therapy and function from the standpoint of the adrenal medulla and its active principle. A dozen evidences of this are to be found in the literature. The clinical finding, that adrenalin or epinephrin is of no noteworthy benefit in Addison's disease, is the best evidence that those who used this prin-

ciple did so in expectation of replacing the missing adrenal hormone. Space for a documental statement of the extent of this error is not available. It is interesting, however, to note that one of these workers, Dr. N. Stewart, of Cleveland, Ohio, once called adrenal insufficiency "the fourth dimension in medicine" (*Endocrinology*, May, 1921, v, p. 299), and eight years later claimed the isolation of the adrenal cortex hormone and attributed to it effects nothing short of the miraculous; e.g., the maintenance of life in bilaterally adrenalectomized animals (*Jour. Am. Med. Assn.*, May 11, 1929, xcii, p. 1569). Already, claims are being made that the adrenal cortex hormone is capable of causing marked improvement in true Addison's disease (Rowntree), and even the inevitable trend of events in malignant disease is being modified and, in some cases, apparently reversed (Coffey and Humber).

Since 1928, I have been interested in developing the claims of F. A. Hartmann (*Am. Jour. Physiol.*, Sept. 1, 1928, lxxxvi, p. 353) and Max A. Goldzieher (*Jour. Am. Med. Assn.*, Dec. 22, 1928, xci, p. 2013), that it is possible to separate from adrenal tissue an active principle, free from epinephrin by Folin's accurate test (*Jour. Biol. Chem.*, 1919, xiii, p. 477), which is a true substitute for the addisonian hormone (cortex hormone), just as insulin is a substitute for the langerhansian hormone. The resulting product, known as Adreno-Cortin, has been used in a clinical way for more than a year, and there is an increasing accumulation of evidence of its physiologic reality and therapeutic value.

Parenthetically, it should be stated that at least four experimental products of this nature are being used at the present time, and the statements here refer to experience with all of them. Apparently, however, the demonstration of their substitutive powers in the maintenance of life and muscle tone in adrenalectomized cats is evidence of their similarity, if not their actual identity.

PHYSIOLOGY OF ADRENAL CORTEX

The outstanding result in maximal hypoadrenia, whether due to tuberculosis of the adrenals, cachexia or adrenalectomy, is *muscle tire*, ranging from fatigue to complete atonia. This condition is pathognomonic of adrenal insufficiency, and there is abundant proof that hypoadrenia is one of the most common symptoms and that it may be responsible for many serious and ultimately fatal syndromes.

Apparently the chemistry of the muscle cell or, to put it another way, the chemistry of fatigue, is under the control of a hormone supplied by the adrenals. Reduce or destroy the power to produce this subtle catalyst, and the muscles droop and death finally ensues. Addison's conclusions did not include any suggestion that the adrenal failure related to Addison's disease was due to the loss of a hormone or chemical messenger, for it was not until five years after the publication of this epoch-making communication (*London Med. Gaz.*, 1849, xliii, p. 517) that the famous French physiologist, Claude Bernard, set forth the seed thought of internal secretion (1855). Since then the French have been well to the front in the study of endocrinology, and the profession is particularly indebted to Dr. Émile Sergent, of Paris, for his insistence, during thirty years, that *l'insuffisance surrénale* was a common clinical entity—and a serious one, too.

The intricacies of cellular chemistry are not yet too well known, but none can deny that adrenal hormone serves as the physiologic fulminate cap to the muscular dynamite. As Sergent puts it:

"By the term *antitoxic function* is to be understood the property that the adrenals possess of exerting a neutralizing action on exogenous and endogenous poisons. Muscular labor engenders the production of toxic substances. When excessive, the accumulation of these toxins—which is the cause of fatigue—brings about physical overstrain—a veritable endogenous intoxication. The adrenals exert a truly specific, neutralizing action in respect to poisons

of muscular origin, the effects of which are analogous to those of curare. If these glands are destroyed, this neutralization is lacking and a condition of depression and muscular fatigue appears, which, in man, we observe as the earliest symptom of hypoadrenia—asthenia." (*"Études cliniques sur l'insuffisance surrénale,"* Paris, 1914.)

ADRENO-CORTIN IN CANCER

The chief reason for the present article is to set forth an answer to the oft-repeated question, "Why does this new hormone apparently benefit certain cases of cancer?"

Since October, 1929, a moderately large number of physicians have been using Adreno-Cortin in cancer, with widely differing results. The consensus is that it has little or no permanent effect on the pathologic tissue changes, but many times it has a striking subjective effect on the physiology. The most important improvement has to do with the comfort of the patients—they feel stronger, the pain is lessened, and some of them even believe that they are going to get well. But we must refuse to pass judgment on any therapeutic claim regarding the cure of malignant disease—or even of Addison's disease—until the agreed period of five years has elapsed.

Why is this? What happens to these patients? How does Adreno-Cortin work?

The answer is that it acts exactly as we have come to expect the hormones to work: (1) by substituting a needed catalytic agent for that which is not being produced; and (2) by stimulating the adrenal cortex to produce more of its own similar endocrine product. The immediate effect, then, is due to substituting an animal hormone for the human hormone. The latter effect (that of homostimulation) presupposes that there is still a portion of the adrenal cortex tissue that is capable of responding to this arousing, and that benefit, therefore, may accrue in two ways—directly and indirectly. The substitutive effect is seen first, for it is almost as prompt (and as fleeting) as that of insulin. If, as Rowntree apparently believes, some cases of Addison's disease have been cured, it was due to regeneration of the remaining normal tissue in the damaged adrenals, just as Hallion puts it:

"Extracts of an organ exert, on the same organ, an exciting influence which lasts for a longer or shorter time. When the organ is insufficient, it is conceivable that this influence augments its action, and, when it is injured, that

it favors its restoration." (*Jour. de méd. de Paris*, 1914, 2s., xxxvi, p. 71).

However it must be remembered that these patients, having once suffered adrenal damage, are more susceptible to it thereafter.

Adrenal cortex extract is essentially a symptomatic remedy of prospective value in all conditions in which the muscle chemistry is defective, with a hypotonia that results in excessive fatigue, cachexia, alimentary and cardiovascular atonicity and hypotension. Its value in both Addison's disease and cancer is believed to be temporary, and for this reason it must be given for a long time, just as is the case with insulin. Unlike insulin, however, adrenal cortex can be administered by mouth. Experience, to date, shows that Adreno-Cortin should be given, parenterally, 1 cc. daily or every other day (1 cc.=5 Gm. of fresh beef adrenal cortex). The capsules (5 gr.=2 Gm. of fresh cortex) are given, three or more a day, to supplement the injections and to prolong the action, in the hope that the gland may regain the power to produce its own hormone.

OTHER POSSIBLE USES

Before concluding, several interesting points should be added, because they suggest some other important therapeutic possibilities:

In 1918, F. H. McCrudden, of Harvard (*Arch. Int. Med.*, Feb., 1918, xxi, p. 252; *Jour. Am. Med. Assn.*, April 27, 1918, lxx, p. 1216), definitely connected amyotonia congenita or myasthenia gravis with adrenal insufficiency. This new standardized product should be tried in these conditions.

Sir Frederick Mott, the British alienist, has shown that insanity is commonly associated with maximum degrees of fatigue.

A long series of autopsies confirms the fact that adrenal damage is almost the rule. (*Brit. Med. Jour.*, July 21, 1923, p. 95.)

Since the toxemias of pneumonia, influenza and, particularly, hyperthyroidism, interfere with muscular chemistry, especially of the heart muscle, Adreno-Cortin should be of some real use in artificially antagonizing fatigue and thus sparing the heart muscle from being overwhelmed.

During the War most convincing proof of the close relation of adrenal damage to influenza emanated from Camp Zachary Taylor. One hundred twenty-six (126) patients, dead from influenza, were brought to autopsy with the following findings in regard to the adrenals: In 20 cases, no gross changes; in 3, frank hemorrhages, with the organs enlarged to twice the normal size; in the remaining 103 cases, slight increase in size, definite congestion, cells of cortex slightly swollen; lipid exhaustion almost constant; percentage with obvious adrenal pathology, 85. (Lucke, Wright, and Kime, *Arch. Int. Med.*, Aug., 1919, xxiv, p. 154.)

Again, A. S. Blumgarten, of New York ("Medical Clinics of North America," v, p. 1056), calls particular attention to the value of the ordinary form of adrenal therapy in hyperthyroidism. How much more rapid and thorough this clinical possibility will be, now that a more active and standardized product is available!

Finally it is a remarkable coincidence that virtually all cats adrenalectomized and used as controls in the research work upon which these findings are based, during the comparatively short period that they lived, developed ulceration of the stomach, duodenum, ileum or colon. So far, no work of which I have knowledge has been done to cultivate the germ of the therapeutic possibilities that this opens up.

"HOSS SENSE"

The practice of the doctor who uses "hoss sense" in prescribing outgrows his capacity. If he doesn't, he usually becomes what is called a therapeutic nihilist and has plenty of time to write diatribes against "polypharmacy."—Edit. in *World Medical Topics*.

Ultramicroscopic Activities of the Serum and Corpuscles of the Blood*

By FRANK WRIGHT, M.D., Chicago

THE METHODS used in ordinary clinical examinations of blood are harsh and destructive. By this I mean that all evidences of the beautifully balanced colloidal system are destroyed and such information as we obtain is secured from dead, fixed and stained smears; or evidence of metabolic substances, separated by very active chemical agents or induced colloidal states, such as are used in serologic reactions. The striking examples of gross intracellular motion of the leukocytes and the manifold activities of the serum, which represents some of the tendencies of the plasma, are lost entirely.

By taking advantage of the increased visibility furnished by the ultramicroscope and powerful illumination of the untreated serum and cells, we are permitted glimpses, at least, of activities in the living blood.

CLOTTING AND SEDIMENTATION

Do not think for a moment that what we see represents the activities of the circulating blood. From the moment the needle punctures the vein, the blood begins to change. It clots more or less readily, and the manner in which it does so attracts the critical eye of the clinician. Some bloods clot quickly, with a small, firm, conical clot, which separates readily from the wall of the test tube. Often the white cells fall upon the outside of the clot, to form a buffy coat. The serum is apt to be highly-colored, often cloudy, sometimes opaque or red tinged by hemolysis. This is the lytic or dehydrated type of blood.

On the other hand, there are bloods which clot slowly, forming a large, soft, bulky, gelatinous clot, with little serum, which tends to be light in color and usually clear. This is the hydrated type of blood. What I want to stress is the fact that abnormal bloods divide themselves into two groups, even to the eye.

If the blood is allowed to flow into suffi-

cient sodium-citrate solution in any standard tube, such as that of Friedlander, and the rate at which the corpuscles settle is noted, we find that the blood which clotted quickly and gave the highly-colored serum is usually the one which sediments most rapidly.† Readings of 8, 12 or 15 minutes are found, compared to an average normal of three hours, or a prolonged (5 to 30-hour) rate, sometimes noted in the hydrated bloods.

BLOOD-CHEMISTRY

We are led to believe that the various metabolites (dextrose, urea, etc.) occur in the blood, partly in solution or suspension in the aqueous portion, and partly attached to the protein. By attached I mean combined with or adsorbed by the protein. As practically all the methods commonly employed depend upon the use of a protein-free filtrate, the quantities found represent those in solution only.

The lytic or dehydrated type of blood shows, as a rule, an increase of one or several of the metabolites; while the fixed, stable or hydrated blood has, on the other hand, quantities of the chemical constituents much below the average amounts found in solution.

The terms hydration and dehydration as applied to the proteins of the serum, refer to the water exchange, along with the other metabolites. When sugar, urea and other constituents of the protein molecule are separated and go into solution, a certain amount of water also leaves the protein. Again, when the chemical ingredients of the blood are reabsorbed by the protein, water accompanies them and it also combines with the molecule.

REFRACTOMETRIC INDEX AND VISCOSITY

The refractometric index of the serum is quite as constant as is the temperature of the body, the average normal reading

*Presented before the Medical Round Table of Chicago, Sept. 9, 1930.

†See articles by Le Blanc (*Clin. Med. & Surg.*, Jan. 1929, p. 46) and J.E.R. McDonagh (*C. M. & S.*, Feb. 1929, p. 91)—Ed.

being 1.3500. Dehydrated bloods range lower, a reading of 1.3455 carrying a grave omen as to continuation of life. Hydrated bloods range higher.

In like manner, the viscosity of the serum is an aid in measuring the changes in it. The average serum viscosity is 1.75 times that of water; dehydration lowering and hydration increasing the viscosity, the usual range being 1.5 to 2.

ULTRAMICROSCOPIC FINDINGS

Helpful as these measurements are, they do not furnish an insight into the finer activities of the blood. If, however, we place a few drops of serum in the center of the cone of light of the dark-field or ultramicroscope, using a paraboloid or cardioid condenser, we can see many particles in both serum and leukocytes.*

In health, these particles are fairly small and uniform in size, deflect the light moderately and show very active brownian motion. We have here visual evidence of that elusive thing called "pep." Such serum contains so-called normal (that is, average) amounts of the usual metabolites, with a refractometric index close to 1.3500 and viscosity about 1.75.

DEHYDRATION

When we look at the serum of a patient exposed to the influence of acute infection, particularly of Gram-positive type, or to chemical intoxication, the picture is quite different. The protein particles lose their activity and begin to divide into smaller, and eventually almost invisible, hazy particles. These are the submicronic and amicronic forms. While these particles are going into solution, certain portions remain insoluble, and these are characterized by their brightness and tendency to coalesce, forming large, white, often ring-like bodies, termed giants.

Such serum contains an increased quantity of metabolites, the sedimentation rate is rapid and the refractometric index and viscosity are low.

If the infection be acute or the intoxication overwhelming, the particles, after undergoing division and partial solution, tend to form a gelatinous mass. This is comparable to the change in state which occurs when gelatin sets or gels, the aqueous

portion being enclosed by the protein. Technically, the dispersed protein becomes the surrounding medium and the process is, quite naturally, called gelation.

Old age, hypertension and diabetes may be mentioned as examples of dehydration, with division of protein particles due to long-continued etiologic factors. The staphylococcal, streptococcal and pneumococcal infections furnish more acute pictures. Gelation is found in many postoperative pneumonias, massive collapse of the lung, toxemias of pregnancy and eclampsia.

HYDRATION

Many long-continued infections, particularly those caused by Gram-negative organisms, or chronic intoxications, of which alcoholism is a good example, furnish pictures of hydration. Here the large, bright, hydrated particles predominate. The motion is slower, partly because of their size, and giant or ringed forms are frequent. These particles tend to huddle, clump, agglutinate and precipitate. It is here that we see, more closely, many of the phenomena familiar to the serologist and bacteriologist.

Considerable dehydration or lysis may occur without causing sufficient symptoms to attract a patient's attention. The frequency with which hypertension or glycosuria is stumbled upon, in the course of a routine examination, may be mentioned. On the other hand, when hydration predominates, subjective symptoms are many and variable. This is true also when the condition is in the making and evidences of both processes are found. This is termed hydro-dehydration or dehydro-hydration, depending upon which finding is more marked. The term gelato-hydration is also used, but, as a rule, this suggests approaching gelation and should be reserved for this emergency.

Clinical interest in the changing colloidal picture grows as one watches the bloods of patients, especially those under treatment. Diabetes furnishes a good example, with high blood-sugar, low viscosity and refractive index and a picture of small particles or amicronic shadows, usually with limited motion or even none.

THE ACTION OF DRUGS

At times the picture changes, because of the splitting off of fat as well as sugar, and here the ultramicroscope reveals bright, lipoglobulin particles and the refractive index comes up—is "out of line."

*A remarkable moving picture of the appearances of the blood serum and leukocytes, as seen under the ultramicroscope, made by Drs. Wright, Le Blanc and Zrunek, was exhibited.—Ed.

When insulin is used there is a change in the protein colloids, as well as in the sugar, for insulin is a marked hydrator. When an excessive dose is administered, the deposition of the large, hydrated particles in the capillaries of the brain is the cause of insulin convulsions. It may be of interest to note that glucose is not the only substance which can dehydrate them. Parathyrin, Contramine (a sulphur preparation) even methenamin will disperse the precipitated particles and allay the symptoms.

The majority of drugs in common use today are dehydrators. Digitalis, the halogens, the cinchophens, those used for anesthesia, the barbitals and methenamin are good examples. When, however, the hydration is overcome and dehydration pushed to the point of gelation, we get so-called toxic action. The digitalis produces coupling of the heart beat, heart block or nausea; the iodides and bromides produce acne; cinchophen has a growing reputation for its unfavorable influence upon the liver, varying from jaundice to acute yellow atrophy; the anesthetics are often the cause of postoperative nausea; while postoperative pneumonia and massive collapse of the lung are also due to gelation; the barbitals produce dermatitis with great regularity; and methenamin often causes bladder tenesmus and hematuria.

It should be noted that digitalis works well when the patient's blood shows evidences of hydration (it is a dehydrator), but is toxic when the blood shows signs of dehydration. The same is true in regard to the barbitol derivatives, the cinchophens and methenamin. Few new remedies are used by the students of McDonagh, but we do feel that we are able to apply the familiar drugs more intelligently.

An interesting group of drugs has been developed by McDonagh—the so-called conductors—the administration of which causes the inactive protein particles to resume their brownian motion. Manganese butyrate often puts a stop to a long series of furuncles or carbuncles; the symmetrical ureas terminate many an infection promptly; and aspirin maintains its reputation as the greatest seller because of this property.

It is hoped that this brief and sketchy presentation of the possibilities, in diagnosis and in scientifically directed and controlled treatment, which are opened up to us by means of this, to many, somewhat unusual type of blood study, will stimulate a considerable number of physicians to undertake it, or at least, to study it, so that they will call for reports of this sort, and be able to interpret them intelligently.

33 N. Wabash Ave.

Progress in Arthritis

(A Review of Recent Contributions)

By D. L. TABERN, Ph.D., *Lake Bluff, Ill.*

THE SUBJECT matter of the August and September, 1930, issues of the *Journal of Laboratory and Clinical Medicine* is an unusually complete and authoritative symposium on arthritis.

R. Pemberton (Philadelphia), in a general survey, calls attention to his belief that, in the absence of fever, arthritis is associated with a slight lowering of basal metabolism, due to curtailment of circulation in those tissues, such as the muscles, which have to do with processes of oxidation; that is, the capillary bed is definitely degenerate and characterized by a sluggish blood flow. In view of this, we can readily understand

the value of heat, exercise, massage and vasodilating drugs in the practical treatment of arthritis.

R. A. Kinsella (St. Louis) believes that rheumatic fever is not so much a disease of the joints as of the vascular system. After the injection of hemolytic streptococci in experimental animals, the lesion began as a minute hemorrhage, definitely outside the joint capsule, becoming a purulent focus and finally penetrating the joint cavity, with the establishment of true arthritis. In human beings the course is similar, save that much longer periods of time are usually required.

The value of the erythrocyte sedimentation test for differentiating between "rheumatoid" (atrophic) and "osteo" (hypertrophic) arthritis is presented by Dawson, Sia and Boots (New York). In active cases of the former, the sedimentation rate of the red blood cells is, as a rule, greatly elevated, attaining values exceeding 30 mm. in one hour; while in osteoarthritis it rarely attains values greater than 30 mm.

VACCINE THERAPY

H. W. Crowe (London), perhaps the foremost exponent of vaccine therapy in chronic arthritis, states that the worst symptoms of chronic arthritis are caused by inflammatory changes in and about the joint, irrespective of the amount of bony change. If this is true, even those cases showing bony change may hope for a measure of relief following proper treatment of the infectious process. In any individual case, several organisms may be concerned. Hence best results are secured by combining a highly polyvalent vaccine with vaccine from organisms isolated from the patient himself. As the result of many years work, no less than 155 streptococci have been isolated from cases, catalogued by Crowe and incorporated in the polyvalent vaccine. In addition, the value of the presence of a specific *micrococcus deformans* has been well established.

In the opinion of the author, even menopausal and metabolic (endocrine) arthritides are all bacterial and logically treated by vaccines; that is, the menopause is a period of lowered resistance, while, in the latter case, the internal glands are themselves probably the victims of bacterial invasion.

Treatment is started with the injection of polyvalent streptococcus vaccine, followed, some days later, by a similar dose of *M. deformans*. After the third dose, the autogenous vaccine is added and the dosage so regulated that maximum results and minimum reactions are sought for. In general, the number of organisms is relatively small in later injections.

SMALL'S ANTISERUM

In striking contrast to the use of such highly polyvalent vaccines is the report of J. C. Small (Philadelphia). This worker stresses his belief in the specificity of *Streptococcus cardioarthritidis* in rheumatic fever, and outlines the progress which has been made in the use of biologic products

derived from it during the past four years.

The antiserum still has many imperfections, particularly in that it causes severe focal reactions, amounting to an increase in temperature and an actual extension of the acute arthritis, which may last from 12 to 14 days. Partially successful attempts have been made to minimize the reactions through the use of minimal amounts of antiserum, given in divided doses, and the simultaneous administration of salicylates.

Since, at best, the antiserum confers protection over a period of only a few weeks, it does not constitute an adequate treatment and recourse must be had to bacterial vaccines. It was at once found that relapses occurred with doses as small as 10,000 of the devitalized streptococci. Even aqueous extracts provoked reactions, so that it was necessary to prepare solutions so dilute that each cubic centimeter contained the extract from but 1/10 of a streptococcus.

The general reaction consists of two phases, the first, characterized by extreme lassitude and malaise, continuing from 6 to 24 hours. This is followed by temporary euphoria, which gives way to the secondary phase, involving nervous excitability, emotional depression and nausea.

In efforts to avoid reactions, it is now Small's practice to continue very high dilutions over many weeks before recourse is had to stronger solutions. The use of these products is still very much in the experimental stage.

Of interest in this connection is the report of Hitchcock, McEwen and Swift (*Am. J. Med. Sc.*, Oct., 1930, p. 497). They state in conclusion, "Of this one can be certain: that antistreptococcus serum in no way replaces the long-established therapy of rheumatic fever, nor does it apparently add enough to warrant its universal adoption. In our experience, the unpleasant reactions sometimes attendant upon its application have not been outbalanced by a reciprocal certainty of therapeutic benefit."

Freiberg and Dorat (Cincinnati) have presented strong evidence for the allergic nature of arthritis lesions, and have demonstrated the relationship between antigenic substances from distant foci and the diseased joint. Their technic of treatment consists in isolating organisms from suspected foci—from the sinuses and from the digestive tract—determining the skin reaction of

the patient to these, and treating him with vaccines from those organisms which give positive reactions.

ORGANISMS INVOLVED

Thomson and Thomson (London) present a series of photographs of organisms isolated from actual cases of arthritis. Thompson and Hill (London) have failed to confirm the work of Small and Birkhaug, that rheumatic fever is caused by the non-color-producing streptococcus described by the latter. They have employed extensive photographic records of cultures, which make possible accurate comparison of organisms obtained over periods of time. Cultures from the blood of rheumatic fever patients were either sterile or yielded only staphylococci. Throat swab cultures, on the other hand, constantly yielded an unusual type of streptococcus, entirely different from the organisms of Small and Birkhaug. The fact that it may be found in the throat of some normal children, casts some doubt upon the specificity of the streptococcus.

In view of the fact that potentially pathogenic bacteria are present in many normal cases, apparently without harm, only to give rise suddenly to arthritic diseases, one must give serious consideration to the question of *predisposition*. From a clinical standpoint, it is well known that many factors, such as fatigue, climate, occupation, heredity, diet and nutrition contribute to the onset of the disease. A particularly close relationship is recognized between the digestive system and the course of arthritis. A disturbance of this system, such as constipation, diarrhea or putrefaction, frequently precedes the onset of joint symptoms.

VITAMINS, DIET AND TRAUMA

With the development of our modern knowledge of the vitamins and their influence on bodily welfare, we begin to appreciate the roles which vitamins A, B and D play in the natural defenses of the body against invading organisms. Mellanby suggests that vitamin A be known as the anti-infective factor. Absence of B and D have been shown to result in intestinal atony. A high carbohydrate diet, apparently through inactivation of vitamin B, has a similar effect.

On the basis of these observations, the arthritic diet should, according to Fletcher (Toronto), contain an abundance of vitamins A, B and D, plenty of protein,

sufficient fat to supply energy requirements and but a minimum of carbohydrates (principally of fruits). Snyder and Traeger (New York), discuss, in detail, suitable basic diets for use in chronic arthritis and supply tables of menus which conform, as closely as is possible in clinical practice, to the theoretic ideal.

Another predisposing factor in arthritis is mechanical damage of joint surfaces, either due to trauma or to excessive strain. Key (St. Louis), has attempted to demonstrate this in experimental animals by so bending the legs of anesthetized young rabbits that valgus deformities of 30 degrees resulted. In each case, definite chronic hypertrophic arthritis resulted. However, the value of the experiments is lessened by the fact that all of the knees showed that articular damage had occurred at the time of manipulation.

The August issue concludes with an interesting description of the British Red Cross Society's new clinic for rheumatism.

R. L. Cecil (New York), in disagreement with most investigators, has found that, in chronic infectious arthritis, as in rheumatic fever, cultures from the joints and blood yield streptococci in a high percentage of cases. In rheumatic fever, green streptococci are usually found, while in true arthritis the organism is of an intermediate type. Animal inoculations with these isolated streptococci produce joint lesions which bear every resemblance to those in human beings.

Hypertrophic arthritis, on the other hand, does not present a picture of an infectious disease, and the blood and joints are normally sterile.

Swain (Boston), points out that the typical symptoms of early atrophic arthritis (unstable superficial circulation, with rapid vasomotor changes, manifested by cold, blue feet, etc.) are frequently noted long before joint symptoms appear. There seem to be excellent possibilities, therefore, in treating this type of patient from the standpoint of preventive medicine; that is, through the use of high-vitamin diets, correction of posture, etc.

Forkner (Boston) submits extensive tables showing the chemical and biologic properties of synovial fluid, in normal and in diseased patients, pointing out the possibility of securing valuable information from this source.

DRUG TREATMENT

It is rather surprising that, in the preceding papers, the role of medicinals in the treatment of arthritis has been so largely neglected.

Perhaps this has been due, in large measure, to the fact that the drugs available, until comparatively recently, have done little more than act as palliative measures, giving the patient a temporary and false impression of improvement. A. G. Young (Boston), contributes an interesting chapter upon this phase.

Salicylates, because of their analgesic and antipyretic actions, have been largely employed. Cinchopen and neocinchopen have a similar pharmacologic action but are, perhaps, a little more effective in increasing the elimination of uric acid. There is no evidence to prove that any of these have any direct curative action on arthritis. On the other hand, it has been found that prophylactic administration of salicylates did not protect experimental animals against arthritis produced by the intravenous injection of hemolytic streptococci. Without question, their effect in lessening pain and muscle spasm is of importance, in that it permits the patient to relax and rest. Narcotics, such as morphine and codeine, should be avoided.

In the field of vasodilators, nitrites might have some value, if their effects were not so fleeting.

Unlike the salicylates, the ammonium salt of o-iodoxy benzoic acid (**Amiodoxyl Benzoate**, N.N.R.) has a marked stimulating action on phagocytosis and the formation of antibodies—a valuable point in the treatment of such a typical infectious process. It provokes a febrile reaction, which lasts from one-half to two hours. Intravenous administration is the mode of choice and, if properly carried out, does not produce alarming reactions. Oral administration is unsatisfactory in most cases. A review of 589 cases reported in the literature shows that 66 percent have shown moderate to marked improvement.

Non-specific agents, such as typhoid vaccine, have been employed in the treatment of arthritis, mainly for the purpose of producing a febrile reaction. This, in turn, counteracts the vasoconstriction, giving rise to temporary or more or less permanent relief. The therapeutic use of

endocrine substances, vitamins, tonics, etc., receives brief consideration.

In conclusion, it is pointed out that, while drug treatment, of itself, can seldom effect a cure, it forms a valuable, if not indispensable part of any therapeutic program for the relief of arthritis and rheumatic fever.

Hench and his associates (Mayo Clinic) have attempted to restore optimum articular circulation by the resection of sympathetic ganglia serving the areas and joints concerned. Careful selection of cases is essential, since only those having typical symptoms of periarticular atrophy can be benefited. It is still too early to estimate the value of the method.

Ely (San Francisco), while holding conventional opinions regarding atrophic (or, as he terms it, Type I) arthritis, believes that the more insidious Type II is frequently due to the presence of protozoa which gain access to the circulation through the open bone at the roots of dead teeth. On this basis, Exelby has employed emetine, with and without arspenamines concurrently. The results seem to leave considerable to be desired, particularly in view of the dangerous nature of emetine.

In conclusion, W. C. Stoner (Cleveland), points out the importance of an intelligent and intensive program in the management of the arthritic patient. He has found *Lactigen*, given intramuscularly, the most acceptable form of non-specific protein therapy, and states that cases which tolerate Amiodoxyl Benzoate well are frequently very greatly benefited.

Such a symposium, of international scope, with papers presented from many viewpoints, by a large group of authors, serves to emphasize that we are far from adequate knowledge of the cause and etiology of arthritic conditions. Treatment is in an even more chaotic state.

It is obvious, however, that none of the common measures—hydrotherapy, heat therapy, spa treatment, or the use of foreign proteins, specific vaccines or drugs, when used alone, serve the best interests of the patient. A complete regime of treatment must be carefully and scientifically planned for each individual case and then conscientiously and carefully carried out, by the patient as well as the physician.

Notes from the Southern Medical Association

Reported By GEORGE B. LAKE, M.D., Chicago

THE TWENTY-FOURTH annual meeting of the Southern Medical Association was held in Louisville, Ky., in November, 1930, and while the attendance was not so large as usual (1,613 physicians registered), the programs were excellent and the exhibits interesting.

The weather (the sun never shone during the whole week and much of the time there was a drizzling rain or mist) did not permit visitors to see a great deal of this interesting old city nor to enjoy the outdoor recreations to the full.

The day after the close of the meeting was celebrated as McDowell Day, in honor of Dr. Ephraim McDowell, the first man who ever did an ovariectomy, by a pilgrimage to Frankfort, Ky., where a statue of him was unveiled in the State Capitol, with appropriate ceremonies, and to Danville, to visit his old home and his grave.

The business meeting resulted in the naming of Dr. Felix J. Underwood, of Jackson, Miss, as president-elect, and the selection of New Orleans as the place for the 1931 meeting.

THE SCIENTIFIC EXHIBIT

Various institutions and individuals made the scientific show decidedly worth while; and though few of the exhibits were really new, they always have great teaching value.

Among the new and unusual features was the demonstration, by Dr. Vincent W. Archer, of the University of Virginia, that it is possible to diagnose infestation with *Ascaris lumbricoides* by means of roentgenograms, made after giving a bar-

ium meal (Fig. 1). He showed a number of pictures in which the worms were plainly visible.

In one booth, lively exhibitions of the cleverness of trained rats were given twice a day.



Courtesy, Louisville-Herald-Post.

Dr. Felix J. Underwood, President-Elect, Southern Medical Association.

Dr. Emmett F. Horine, of Louisville, showed a movie (which received the third award), demonstrating the nervous mechanism of the heart and how it works. Dissections of the bundle of His, together with animated diagrams of normal and pathologic discharges of nervous energy and actual photographs of the living heart under various types of stimulation, made up this highly illuminating picture. Most of those who saw it have a better understanding of the nature of heart block than they ever had before.

The first award went to Dr. E. H. Cary, of Baylor University, Dallas, Tex., for his exhibit of tumors of the eye; and the second to Dr. Charles N. Kavanaugh, Lexington, Ky., for his presen-

tation of tularemia. Dr. W. W. Duke, of Kansas City, was given honorable mention for his exhibition of the effects, diagnosis and treatment of allergy.

THE TECHNICAL EXHIBITS

Some of the technical exhibits actually rivaled the scientific in interest and value, notably the series of surgical, anatomic, physiologic and other professionally instructive moving pictures shown by the Petrolagar people, in their elaborate modernistic booth, and by the Eastman Kodak Co. These films are available for showing before county and other medical societies,



Courtesy, J.A.M.A.

Fig. 1.—Typical appearance of ascarids in barium-filled jejenum, showing filling defects and barium-filled enteric canals of parasites.

under reasonable conditions, and those who are interested should write for particulars.

Daniel T. Gray, of Louisville, has devised a new and practical apparatus (shown in Fig. 2) for permitting patients to walk with little effort after operations and leg fractures, thus enabling them to regain their strength, as well as relieving those who care for them of a serious burden.

The new Syldores baby bed (Fig. 3) looks like a valuable help to pediatric practice, particularly in institutions.

The A. S. Aloe Co. was demonstrating the Leech-Beattie, motor-driven plaster cutter, which the orthopedic surgeons and others who apply many casts should welcome, and also a semi-portable apparatus (the Salerni) for giving high colonic irrigations, which looks as though it had solved some of the problems in this line.

The dealers in drugs, foods, apparatus and supplies gave much really valuable instruction to an appreciative audience, whose members did not, to all appearances, buy very heavily, due to the present financial conditions.

ABSTRACTS OF SOME OF THE PAPERS READ

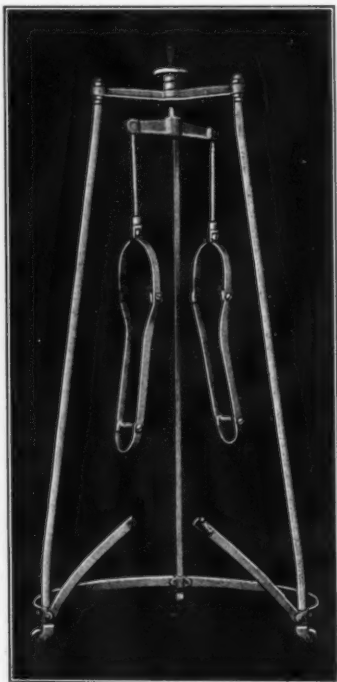
BLOOD TRANSFUSION

By Drs. J. D. Hancock, H. M. Weeter and L. W. Frank, Louisville, Ky.

The citrate method of blood transfusion is simpler and more widely applicable than the direct method, so that it can be used by the careful general practitioner. It is the method of choice in treating the patient who has had a massive hemorrhage and is useful in the primary and secondary anemias and in the preoperative treatment of the "bad-risk" surgical patient, though in these last-mentioned conditions the direct transfusion of whole, fresh blood is preferable.

In blood-stream infections, direct transfusion is more effective than the intravenous injection of bactericides, especially if the donor is immune to the infection being treated.

Any physician who plans to do transfusions should have the blood of several prospective donors typed, so that at least one of each type is readily available when



Courtesy, Daniel T. Gray, Louisville, Ky.

Fig. 2.



Courtesy, Killishek & Auer Co., Menasha, Wis.

Fig. 3.

needed. All donors should be healthy and Wassermann-negative. It is best to use a donor whose blood is of the same type as that of the patient, and if there is time this fact should be verified by a cross-agglutination with the patient's blood just before the infusion is performed. In an emergency, a "universal" donor (Type IV) may be used, but it should be remembered that these are not always correctly typed and a smaller amount of blood should be used and *injected very slowly*, watching constantly for reactions.

Apparatus

To do a citrate transfusion one needs two sharp needles of 16 gage or larger (a special infusion needle is convenient); a graduated, 500 cc. beaker; an infusion flask and tubing; and an ampule containing 50 cc. of 2.5-percent sodium citrate solution.

Before the operation, all apparatus should be carefully inspected and sterilized and the infusion flask should be coated with paraffin on the inside, by rinsing it thoroughly with a solution of 2 Gm. of thrice-sterilized paraffin, dissolved in 32 cc. of ether, and letting the ether evaporate.

Technic

Prepare the skin of the donor and recipient, over the sites of puncture, and drape them; place the citrate solution in the sterile beaker; draw blood from the donor into the beaker up to the 500 cc.

mark (450 cc.) and mix with the solution, using a sterile glass rod; filter the citrated blood through several thicknesses of sterile gauze into the infusion flask, to which tubing and a needle are connected; insert the needle into the recipient's vein and let the blood flow in slowly.

If much time is lost in this process, the blood in the flask should be kept warm by tying a rubber bag, filled with hot water, around it.

If the patient has a chill after the transfusion, apply artificial heat; if a fever, apply ice bags.

It should be remembered that no transfusion is without danger of reactions of two types; hemolytic, appearing at once (after the injection of 60 cc. of blood) and sometimes being very serious; and anaphylactic, coming on after four or five hours and almost always ending in recovery, after a period of more or less marked discomfort.

THE INJECTION TREATMENT OF VARICOSE VEINS

By Frank P. Strickler, M.D., Louisville, Ky.

The injection treatment of varicose veins has come to stay, but it must be used with care and judgment. Every patient must have a complete physical examination, to rule out recent phlebitis, cardiorenal disease, diabetes and Buerger's disease. Milder cases of circulatory disease or diabetes may, if necessary, be treated safely, if *great care is used*.

Before making the injection, test the patency of the deep veins by applying an "Ace" or other elastic bandage snugly to the affected leg. If the deep veins are occluded, the leg will promptly swell and become extremely painful. In such cases, *do not inject*.

Injections should be made with the patient sitting in a chair, using needles of 23 to 25 gage.

The vein should be emptied by elevating the leg for a few moments and applying a tourniquet above and below the site of injection. A self-retaining occluder may be used if the affected area is small.

The solutions now used for this purpose generally contain dextrose, sodium chloride or sodium salicylate.* It is best not to use

*A solution containing dextrose and sodium chloride, with a local analgesic, marketed in ampules and known as Varisol is becoming increasingly popular.—Ed.

dextrose in diabetic patients. The salicylate is very painful when used alone, and is not well borne by all patients. The pain can be minimized by adding some 2-percent urethane solution (Swan-Myers); and idiosyncrasy can be determined by giving small quantities at first and observing the results. It is best to keep several different solutions on hand, to meet various conditions.

Obliteration of the veins injected is complete after from three to six months.

In treating varicose ulcers by injection, it is best to keep clear of the immediate area of infiltration.

In the operative treatment of varicose veins, the death rate is 1 in 250, and the recurrence rate 30 percent. When the injection method is used there is only one death in 4,000 cases, and the recurrence rate is 6 percent. Moreover, the patient is ambulatory during the latter treatment.

"JAKE" PARALYSIS

By Wm. E. Gardner, M.D., Louisville, Ky.

The paralysis following the drinking of Jamaica ginger shows a rather typical picture of toxic multiple neuritis, and the established treatment for that condition is applicable.

The patient should be kept in bed, with the legs in splints to correct the foot-drop, and heat (electric-light "baking") and sedatives should be used to control the pain and cramps.

When the acute symptoms subside (in a month or two) the splints may be removed and massage and galvanism carefully applied to the affected parts. General sun baths are also helpful.

The treatment of these cases is an extended and discouraging process, as there is a long latent period, during which no progress is obvious. If the patient can walk reasonably well at the end of a year of treatment, the case has been handled satisfactorily.

SCHILLING'S DIFFERENTIAL BLOOD COUNT

By J. D. Allen, M.D., Louisville, Ky.

From the standpoint of the Schilling blood cell count, there are three types of leukocytes: the lymphocytes, coming from the lymphatic tissue and constituting, normally, 24 percent of the leukocytes; the monocytes (sometimes called large lymphocytes), from the reticuloendothelium (6 percent); and the granulocytes, from the bone marrow. Of these last there are six varieties; the basophiles (0.25 to 0.5 percent); the eosinophiles (about 3 percent); the myelocytes and juvenile cells (none in normal blood); the staff cells (4 percent); and the cells with multisegmented nuclei (63 percent).

The myelocytes and juvenile cells are sometimes called reticulocytes. The former resemble the monocytes in size and shape, with a large, round, solitary nucleus, but take the acid stain in both protoplasm and nucleus and show a network throughout their structure, as do also the juvenile cells, which differ only in having a horseshoe-shaped nucleus.

The staff cells have a nucleus like that of the juveniles, but show the typical staining reactions of the adult, multisegmented cells.

The Schilling count is said to shift to the left when there is an increase in the types of granulocytes, other than those with multisegmented nuclei, the number of which is normally about 6 or 7 percent; and the greater the left shift, the more severe and acute is the infection which causes it. In moderate pyogenic infections it may amount to from 10 to 25 percent; while in severe infections it varies from 20 to 40 percent.

If the toxemia is overwhelming, there may be a complete absence of granulocytes (agranulocytosis), the leukocytes consisting solely of monocytes and lymphocytes. In chronic infections there is a relative increase in the lymphocytes.



Ephraim McDowell
To Whom a Statue Was Unveiled.

Perhaps the greatest importance of the Schilling count appears in connection with prognosis and with the decision as to the time for operation in intra-abdominal infections. The count may be made every hour, if necessary and, if the left shift is not marked, the condition is sub-acute or chronic and the operation may be postponed without danger. If, however, the shift is great, the operation should be performed immediately, even though the absolute leukocyte count is not unduly high.

MODERN METHODS IN TREATING TUBERCULOSIS

By Oscar O. Miller, M.D., Louisville, Ky.

Today it goes without saying that all patients with tuberculosis require fresh air, abundance of nourishing food, sunshine and rest in bed, until the temperature has been continuously normal for three months.

Modern methods of treatment consist, largely, of measures for securing local rest of the affected lung, and the closure of cavities by mechanical or surgical means: In the former class the use of shot bags and the canvas sling; in the latter, phrenicectomy, artificial pneumothorax and thoracoplasty.

Shot bags are especially helpful when the lesions are in the apices of the lungs. At first, the weight of the bags should be about one pound, and this should be increased, a few ounces a day, until the patient can carry four or five pounds on each side for several hours a day, or as much more as he can tolerate without undue discomfort.

In using the sling, the patient lies on the affected side and his body is just lifted off the bed by a broad strip of canvas, passing under the affected area and secured in a proper apparatus. The diseased lung is thus compressed by the weight of the body for increasing intervals, up to eight or ten hours a day.

Phrenicectomy is more efficient than artificial pneumothorax, especially in dealing with basal lesions, as it relieves the tension on the affected lung by permitting the diaphragm to rise.

The routine use of roentgenography, with the barium enema, shows that 35 percent of all patients with advanced pulmonary tuberculosis also have tuberculous enteritis; though by no means all of these have diarrhea. These patients should be treated by heliotherapy and a super-vitamin diet for two years or more, with an x-ray



Louisville Free Public Library.
Where Some of the Meetings Were Held.

study every three months to determine their progress.

Tuberculous patients must be taught to live with their disease, as those having advanced lesions rarely or never become entirely normal.

COMMON EYE, EAR, NOSE AND THROAT SYMPTOMS

By W. G. Harrison, M.D., Pres, Alabama State Med. Assn., Birmingham, Ala.

Symptoms in the eye and nose are frequently the result of kidney conditions. The diagnosis can be made by finding a persistently low specific gravity and a trace of albumin in the urine and a high systolic blood pressure.

Vertigo is, next to hemorrhage, the most alarming symptom to the patient. Aside from its presence in cerebellar and vestibular disease, it is frequent in gout, syphilis, heart disease, etc.

Cough, when persistent, requires careful study. Three patients were sent to Denver for treatment for tuberculosis, where it was found that the cough was due to an elongated uvula.

Impacted cerumen in the external auditory canal, post-nasal droppings and adenoids pressing upon the posterior pharyngeal wall may cause an annoying cough. In these cases there is no fever nor loss of weight.

Earache may be due to a carious molar tooth or to an ulcer at the base of the tongue. On the other hand, a patient may have a severe otitis media, and complain of no pain whatever.

A foul and sanious discharge from one nostril is usually due, either to a foreign body or to nasal diphtheria. In the latter condition, the temperature is usually normal or only slightly elevated (it is much higher in acute tonsillitis), so that it is

difficult to convince the family that the case is serious.

Catarrhal croup usually begins between 10 P.M. and 2 A.M., and is promptly relieved by emetics. If hoarseness persists, watch for laryngeal diphtheria.

Lying behind the ear is a small lymph node which drains the posterior part of the scalp. When this becomes inflamed, due to some infection higher up, a diagnosis of mastoiditis is frequently made.

SODIUM AMYTAL BY MOUTH IN OBSTETRICS

By Bayard Carter, M.D., Prof. of Obstetrics, Univ. of Virginia

Our only satisfactory results from the use of Sodium Amytal in obstetrics have been seen following initial doses of 15 to 18 grains (1.0 to 1.2 Gm.). The total dosage during a labor frequently amounts to 25 to 30 grains (1.65 to 2.0 Gm.).

In these doses the drug produces its maximum effect in about 27 minutes, causing analgesia and amnesia by reducing external stimuli. The patient is partially aroused by the pains but sleeps between them and is in excellent condition throughout, the fall in blood pressure averaging not more than 10 mm. Labor is not prolonged and the babies are in excellent condition. The uterus contracts well after delivery.

The use of this drug is sometimes attended by a stage of rather violent excitement, so that the patient requires the constant attendance of a nurse for several hours. Two (2) patients, out of 50, showed a marked idiosyncrasy to the drug.*

We have classified our results as:

1.—No effect (where the drug was given too late, the labor was very rapid, the patient was resistant or some complication occurred).

2.—Fair (slight analgesia).

3.—Good (reasonably good analgesia and incomplete amnesia).

4.—Perfect (complete analgesia and amnesia).

Nitrous oxide, in small doses and high dilutions, was used during actual delivery and postpartum repairs.

We are of the opinion that Sodium Amytal, given by mouth in proper doses, acts as well as when given intravenously, and that it hastens the first stage of labor.

*The recently introduced barbituric acid derivative, Nembutal, is effective in much smaller doses and seems to produce little or no excitement stage.—Ed.

It is not expected to produce complete anesthesia.

THE "SIEVE" SKIN GRAFT

By Beverly Douglas, M.D., Assoc. Prof. of Surg. Vanderbilt Univ., Nashville, Tenn.

In treating leg ulcers or other conditions where large denuded areas must be covered

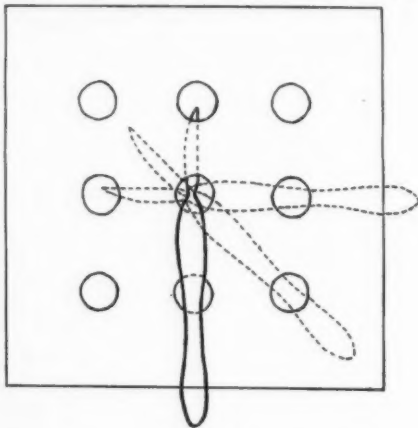


Fig. 4.

by non-pedicle skin grafts, such pieces of integument may be transplanted safely and satisfactorily by using the "sieve" method.

An accurate pattern of the area to be covered is made, and a slightly larger area is marked out on the surface from which the graft is to be cut.

A sharp, circular punch is then used to cut through all the layers of the skin, at regular intervals, after which the intervening skin is carefully undercut with a small, sharp knife, leaving the punched-out pieces intact (Fig. 4). The donor area readily heals over from these undisturbed islands of skin and the graft "takes" readily, if the usual precautions are used.

After this operation, the skin of both the grafted and the donor area is soft and pliable.

PLAYING FOR ATTENTION

By W. W. Young, M.D., Atlanta, Ga.

"Mental sanity moves forward on the feet of little children."

The adult reflects the environment of childhood. When the child enters school, the teacher must share the responsibility with the parents. We are only now beginning to appreciate the importance of emotional education.

Fear is self-preservative, congenital, and phylogenetically the oldest emotion. The child feels *insecure* and, searching for some means of compensating that feeling, discovers that this may be accomplished by playing for the attention of the adults in its environment. If such a play brings the desired results, it conditions the reaction-pattern of the individual, whether this be socially acceptable or not.

Habit patterns should be formed on a sane and positive basis; and when so formed they may be used constructively.

Discussion

Dr. Nelson, St. Louis: Many other emotions than fear determine conduct. The word fear must be interpreted extremely freely in order to cover the ground.

Dr. Truitt, Baltimore: In order to straighten out a child, we must study and regulate the parents carefully.

Dr. Tom Williams, Miami Beach, Fla.: The most powerful feeling of human beings is the desire for social approval. This is even stronger than the lower biologic urges.

Dr. Young (closing): We must go back to the beginning, when things are simpler. Complications develop later. Feelings of insecurity are often injected into a child by the parents.

BEHAVIOR PROBLEMS IN CHILDREN

By William L. Nelson, M.D., St. Louis, Mo.

Behavior is the result of the individual's mental process and has physiologic or organic and psychological or mental factors.

In the absence of physical deficiencies or malfunctions, the child who lacks a reasonable sense of responsibility has been mishandled by its parents and teachers.

I recently saw a boy of ten years who was reported by his teacher to be stupid and incorrigible. He was the only son of high-grade parents who had little real understanding of his psychic nature and needs. A mental test revealed the very high intelligence quotient of 120, and in all ways he was a distinctly superior boy.

A good deal of instruction to his parents resulted in radical changes in his home and extra-school environment; and a less stolid and unsympathetic teacher was found, who helped.

The boy is now doing well; but children who have once been seriously maladjusted rarely become entirely normal.

Discussion

Dr. Unsworth, New Orleans: Biologic factors are primary, in maladjusted children. If they are sound physically they will adjust themselves to their environment. Syphilis, alcoholism and endocrine disorders play a large part in feeble-mindedness.

Dr. Tom Williams, West Palm Beach, Fla.: We need to pay more—not less—attention to the strictly psychic factors in behavior problems. Perfectly sound children, physically, do become maladjusted; and we do adjust them, even to an unsatisfactory environment, by psychic methods.

Dr. G. B. Lake, Chicago: The mind is not the result of physical processes (though it is influenced by them), but is, as Dr. William A. White so well says, "the most complex and delicate organ of man."

Physical factors do influence feeble-mindedness, but Dr. Nelson's case was not such. This was a boy of superior mentality, maladjusted in purely psychic lines and readjusted by psychic methods. Both he and his parents were *uninstructed*.

These cases are by no means due solely or chiefly to biologic causes. We all see patients who are perfectly sound, by all physical tests, and yet who are all wrong psychically.

Dr. Nelson (closing): If there were no biologic stimuli, there would, of course, be no behavior. There may, too, be biochemical changes which we cannot yet demonstrate. Prenatal influences (which are physical, not mental) do influence behavior, in certain ways. The endocrines are a factor; but they do not initiate psychic maladjustment.

We must always keep in mind the probable influence of the experiences through which an individual is now passing, upon his later life.

CAUSES AND MANAGEMENT OF DIARRHEA IN CHILDREN

By McKim Marriott, M.D., St. Louis, Mo.

Under normal circumstances, there are certain secretions or other factors in the stomachs and duodenum of infants which inhibit bacterial growth; but, when overfeeding or some other unusual condition exists, the food remains unabsorbed and bacteria which may, in their usual locations, be harmless, grow freely where they should not do so and produce untoward symptoms.

If we stop the feeding for a time, this abnormal process is interrupted.

The normal gastric secretions are acid and inhibit the growth of intestinal bacteria. If we give foods which neutralize this acidity, especially if they are of such a character as to undergo fermentation readily, the colon bacillus or other organisms will grow freely in the stomach. If this organ is now acidified, the growth stops.

Premature infants have little acid in their stomachs, and fever, cow's milk and irritation of the mouth and esophagus of normal infants decrease the gastric acidity, the last-named acting by increasing the normally-alkaline secretions of the upper end of the digestive and respiratory tract.

Any infection, therefore, which causes fever predisposes the patient to diarrhea, particularly in such conditions as rhinopharyngitis, otitis media and mastoiditis, where the third factor mentioned above is operative. If a hemolytic streptococcus is the infecting organism, the condition will be worse. Pyelitis is attended by vomiting, rather than diarrhea.

On the other hand, parenteral infections, such as middle-ear disease, may result, indirectly, from diarrhea and its accompanying gastric disturbances, because the

patient's general resistance is lowered, and because vomited colon bacilli may enter the ear.

In dealing with these disturbances, we must discover and correct the underlying abnormal conditions. The food must be of a non-fermentable type and free from bacteria (dried protein milk, for example), and its acidity must be increased by adding lactic or some other organic acid or a *buffered solution*, consisting of lactic acid and sodium lactate.

This buffered solution may well be given, combined with sugar, as the child's sole drink, in place of water; and it may be used instead of water in making up the solutions of protein milk. These measures should be carried out rigidly until the diarrhea is entirely relieved; and may be continued indefinitely in weak infants. The acid is metabolized in the body and excreted as a base.

Any parenteral infection which may be present should be treated adequately. If otitis media or mastoiditis is due to or combined with diarrhea, the condition is aggravated. We must, however, deal with the diarrhea primarily, and must not forget to maintain the patient's water balance and general nutrition.

ANIMAL EXPERIMENTATION

Investigators themselves, who pass their whole time in the laboratory, and have no regular intercourse with the outside world, cannot influence public opinion on the question of experiments. It is your duty, gentlemen—I appeal to the medical men in my audience—to assist us here. You move about every day amongst the people, and come into contact with the highest and lowest in the land. You are linked with them by the most intimate ties. You actively share in their greatest joys, and their keenest sorrows. When you speak in defence of science which devotes itself to the life and health of mankind, your words will be listened to. It lies, therefore, with you to teach the public that experiments upon animals are unavoidably necessary for the advancement of medicine, and of the greatest conceivable advantage to it. You must make it understood that the greater the precision attained by experiments upon animals, the more certainly will patients be cured, and the less frequently will they have to submit to a trial of remedies, with possibly serious consequences.—I. P. PAVLOV.

Health in Soviet Russia's Program

By JOSEPH E. G. WADDINGTON, M.D., *Detroit, Mich.*

THE TRAVELER into Russia automatically falls into one of three quite distinct categories. The first and most numerous, the average tourist, with little or no knowledge of any language except his own and hurried through the country with only a perfunctory interpreter's stereotyped interpretation, will thereby obtain and retain an extremely superficial and non-flattering impression of that which is so kaleidoscopically and confusingly revealed to his bewildered observation.

The second and third types travel with some influential delegation, thereby obtaining first-hand, direct information from those most capable of imparting the facts; the one is unbiased, dispassionately reviews what is presented before him and is capable of thus appraising the situation; the other comes with decided prejudices and eagerly seizes upon everything designed in the slightest degree to uphold him in his jaundiced outlook. Having no preconceived bias and, fortunately, being in an especial degree favored with unusual opportunity for intimate contact with Soviet authorities and other sources of unimpeachable information, I can relate my impression of Russia with scientific impartiality.

The hop, skip and jump tourist, who sees only the somewhat tawdry and dilapidated stage setting of a world experiment in economic, educational and social equalization, can have no conception of the backstage drama of pathos, enthusiasm and faith of a nation being reborn from tyrannical oppression and peasant ignorance into the freedom (comparative) of each for the Nation and the Nation for all.

Sweeping reforms are not accomplished by simply titillating the mind with idealistic conceptions, but only by severe hardships inflicted upon some, for the ultimate advantage of more. To obtain real or approximate facts concerning Soviet Russia, it is not only necessary to go there, but also to be equipped with influential resources; only then can one hope adequately to prove or disprove much conflicting and disturbing "on dit," as distance may, not only lend enchantment to the view, but also, may grievously distort it.

SOCIAL UPHEAVAL

The first thing that accentuates itself upon entering Soviet Russia, and is increasingly impressed upon one's perception, is the complete class upheaval. Despite her communism and non-recognition of class distinction, however, Soviet Russia, in its experimental stage, has to recognize practically that even labor and presumed social equality has its own unavoidable distinctions.

To appraise present-day Russia correctly, the critic should, by all means, avoid the unpardonable error of comparing it with any other country than itself; that is, with Czarist Russia. Here is a vast country of one hundred and sixty million people, with over seventy different languages and dialects; a country extremely impoverished and but meagerly educated. Suddenly, all class distinctions are abolished; the bourgeois eliminated; and labor, collective labor, is elevated in rank and privilege above even governmental officials, employees, merchants and the professions. Naturally such a complete reversal of former social and economic conditions, with its modern exemplification of "the first shall be last and the last shall be first," has produced and is still producing much that needs considerable and arduous readjustment.

The uninformed believe that all Russians—or at least the great majority—are Communists. The Communists are the ruling or governmental party, numbering only 1,800,000 persons, 600,000 of whom are only on probation, and to be a member of that party connotes great honor, unblemished character, unremitting labor and comparatively poor pay. Only after years of apprenticeship and severe labor in the interests of the party—the country—does one become eligible to election as a Communist. If a Communist accepts a bribe the penalty is death; whereas a laborer, not a member of the communistic circle, would only receive a limited term in prison for the same offense. The communistic party represents government of, for and by the people; for so numerically small a group to govern so

extensive a domain, the party must, like Caesar's wife, be ever above suspicion.

THE FIVE YEAR PLAN

The observing visitor to Russia very quickly discovers the significance of "The Five Year Plan," which is to lead to national independence. This colossal economic feature, born of Lenin's keen prophetic insight, is as the vision, to the wandering Israelites, of the Promised Land, flowing with milk and honey. It means to every Soviet Russian, the future prosperity, life and happiness of himself and all his comrades. Enthusiasm and faith; eschewment of self; all for all and none for one, is the prevailing spirit in communistic circles, and the spirit which is hoped to be generally developed throughout the Nation. The five-year plan, which entails developing anything and every thing within the far-stretched and heterogeneous boundaries of the seven republics comprising the "Union of Soviet Socialistic Republics" (U.S.S.R.), means gigantic industrialization and the collectivization of all labor, agriculture in particular, where feasible. Individualization is severely frowned upon, as the unity of strength in numbers, collectively, is everywhere theoretically and practically taught and demonstrated.

Fundamentally important to the success of the five year plan is the national education of young and old in all matters of health, economics and social equalization. The estates and residences of former royalty, aristocracy and the bourgeois have been turned into "Parks of Rest and Culture"; night sanatoriums; "Homes of the Peasant"; schools; children's nurseries; "Re-cuperation Homes"; clubs; museums. In these various magnificent palaces of public assemblage, anatomy, physiology and hygienic care are popularly and scientifically presented by means of lectures, posters, diagrams, wax models and by normal and pathologic specimens.

WORKING CONDITIONS

As labor recognizes no economic inequality between the sexes, institutions are provided free where the workers may leave their children during the hours of labor, secure in the knowledge that the little ones will receive the most scientific supervision and care.

The Russian week now consists of only five days—four days for work and one day for recreation and rest—consequently the

machinery of labor is never at rest, yet the workers have six days surcease in each calendar month.

The Institute of Scientific Research into Professional (Vocational) Diseases is continually busy with health problems affecting the workers in all lines of industry: comparison of several hours' continuous labor without a rest period and the same number of hours with intermittent relaxation; the effect of fatigue in various occupations; the possibly injurious effects upon important organs or tissues caused by certain industrial occupations, the housewife's labor and the effect of rest or lack of regular rest periods; predisposition to certain diseases arising from special avocation or industries; etc.

The pregnant woman, if a laborer, is allowed two months' vacation, with medical supervision and care, before and after confinement; an employee obtains only six weeks' vacation. An employee or governmental worker usually receives less pay than a laborer or producer; and the latter is, not only honored as preeminently the backbone and builder of the Nation, but is entitled to many privileges: Ration cards and theater tickets are scaled to varying discounts from the established prices; and preferential care in all institutions is accorded him.

In all public buildings, in the windows of the stores, upon the public walls, in theaters, museums, everywhere are to be seen, prominently displayed, posters diagramming the progress being made toward accomplishment of the "Five Year Plan" for developing the country's resources into a self-sustaining autonomy; and the encouraging slogan is ever, "The Five Year Plan in Four."

"Houses of the Peasant" are club rooms where everything—bed and board, medical examination and advice, legal advice, movies, health education, and education in the five year plan and in economics in general is furnished entirely free to peasants arriving in Moscow and Leningrad from more or less remote parts of Russia.

So busy is Soviet Russia with its educational and economic plans that there is no "night life," in the large cities. With the five day week and the scarcity of even necessities, the laborer finds inexpensive and healthful recreation in the daytime, at the "Parks of Rest and Culture," where every conceivable form of outdoor sport may be indulged in by men, women and

children alike. At the Moscow "Park" may be seen 100,000 people engaged in outdoor and indoor amusements, or else intently studying the posters and other educational matter so lavishly exhibited in the various institutional buildings. Few policemen are to be seen at any time, anywhere, as the Russian is so thoroughly imbued with the idea that he is a part of the government and that it is his personal business to preserve law and order that the citizenry in general may be confidently expected to prevent or take care of occasional individual infractions of law. In the assemblage of 100,000 at the "Park," not only was no policeman to be seen, but there was absolutely not one present in the grounds, and the decorum was above reproach.

NIGHT SANATORIUMS

"Night sanatoriums" are a unique feature of Russian socialistic health. The laborer in a factory, suffering from some affection—cardiac, respiratory, gastric, not serious enough to incapacitate him entirely from work—instead of going home each evening to a quite possibly crowded and unhygienic room, goes to the sanatorium. Here he is examined by the physicians; his clothes changed; takes a bath; has his supper, bed and breakfast, and thence to the factory

for the day's work. No charge is made for this sanatorium care and the usual "nightly" stay is for a period of six weeks, which, however, may be lengthened if deemed necessary. Diabetic patients and others needing special diet may come to the sanatorium for a specially prepared lunch and supper. Usually these recuperative institutions are conveniently situated in a factory district, but where this is not so, the laborer is allowed the necessary time to obtain his special lunch.

Work and education are combined into an "Excelsior" which the Russian trusts will lead him, eventually, to the peak of national achievement and world supremacy. Unquestionably there is much of value to be learned from Soviet Russia, by him who is not blinded by prejudice and deafened by ignorant egoism.

There is a dark side to most national experiments, but the part of the Russian program dealing with health education, which consciously or unconsciously underlies and permeates the entire national organization and development, might profitably be attempted by all nations, to their increasing prosperity, health and happiness.

110 Atkinson St.

Progress in Internal Medicine

By W. FOREST DUTTON, M.D., Amarillo, Texas

HISTORIANS assume that internal medicine had its inception with the Sumerian race, about 4000 to 3000 B. C. M. Jastrow's interpretation of documents found at the site of Nineveh explicates that Assyro-Babylonian physicians had a concept of etiology, diagnosis, prophylaxis and treatment. It may be readily conceived that internal medicine, among both the Persians and the Babylonians, was occupied mainly in a therapeutic attempt to cast out demons of disease.

The next period of medicine begins properly in the Age of Pericles and its systematic advancement centers about Hippocrates (460-370 B. C.), who dissociated medicine from theurgy and philosophy. Hippocrates, a man of genius, taught the art of clinical inspection and observation and

analytical deduction. The "Father of Medicine" served as a model of thoroughness for Sydenham, Heberden, Laennec, Bright, Addison and Charcot. The Persian physician, Rhazes (860-932), was a great clinician and ranks with Hippocrates, Aretaeus and Sydenham, as one of the original delineators of disease.

During the Medieval period, independent treatises on the practice of medicine, of some importance, were written by Magister Bartholomaeus, Copho Junior, Johannes Platearius Junior, and by Archimatheus. They, in the main, represented the Salernian School.

Medical practice during the Renaissance period was a peculiar melange of superstition, herb-doctoring and quackery. The story of medicine in this period is summed

up in the barber surgeons, horse-gelders, witches, soothsayers and midwives.

Internal medicine, in the latter half of the seventeenth century, took an entirely new turn in the work of Thomas Sydenham (1624-89), the reviver of Hippocratic methods of observation and experience. Sydenham ennobled the practice of physic through qualities of piety, good humor and good sense. He contributed a great deal to the literature and medicine of his period, and his influence lasted to and beyond the advent of the Vienna School. His clinical reputation, however, rested upon his firsthand accounts of disease and his therapeutic knowledge.

Leopold Auenbrugger (1722-1809) was the first to record the use of immediate percussion of the chest in diagnosis, then, as now, a valuable procedure.

Recording the pulse rate per minute and the clinical thermometer were methods of precision, introduced in diagnosis during the eighteenth century.

William Withering (1741-99), one of the ablest clinicians of his time, known as the pioneer in the correct use of digitalis and a man of unusual versatility, enjoyed the distinction of being one of the greatest of medical botanists. His "*Botanical Arrangement of all the Vegetables*" (1776) is esteemed his masterpiece, and his "*Account of the Foxglove*" (1785) a pharmacologic classic.

There was no clinical instruction of importance on the continent, except at Leyden, until 1745. Later (1785), abortive attempts at instruction in internal medicine were made at the London Hospital Medical School and other institutions.

The advancement of internal medicine as a science took a step in this direction through the initiative of Broussais (1772-1838), who did away with metaphysical conceptions of disease, only to substitute something worse. This condition did not endure for long, because Louis (1787-1872) evaluated the arbitrary doctrines of Broussais and demonstrated to the medical world concepts of intrinsic worth.

Sir Thomas Watson (1792-1882) wrote the most important English treatise on the practice of medicine in the first half of the nineteenth century, "*Lectures on the Principles and Practice of Physic*" (1843).

Clinical medicine, under the influence of Villeman (1827-92), Trousseau (1801-67) and Dieulafoy (1839-1911), gave added impetus to French ascendancy in medicine.

German clinical medicine, in the second half of the nineteenth century, would not be complete without including the names of Frerichs, Traube, Kussmaul, Gerhardt, Ziemssen, Leyden, Senator, Naunyn, Freidrich, Müller and their pupils.

The most prominent English clinicians during the later period were Gull (1816-90), Wilks (1824-1911) Fagge (1838-83), Jenner (1815-98) and Allbutt (1836-1925).

In America, during the middle and latter part of the nineteenth century, Flint (1812-86), Loomis (1831-95), Pepper (1843-98), Da Costa (1833-1900) and Janeway (1841-1911), played important roles in the progress of clinical medicine.

It remained, however, for William Osler (1849-1919), the immortal, to develop the scientific teaching of internal medicine. Osler was at all times the artist, the scholar and the scientist. Endowed by nature with the spirit of observation and investigation, his education amplified his fitness for the work he carried on, to achieve the distinction of the most learned physician of his time.

Lewellys F. Barker (1867-), the imitable, succeeded Osler at Johns Hopkins Hospital. His training in the fundamental branches of medicine, as neurology and clinical pathology, formed a basis for the development of one of the most astute minds in the diagnostics of medicine.

In the middle west, Frank Billings (1854-), an authority on clinical medicine and therapeutics, devoted the better years of his career to the education of young physicians. The clinical lectures of Billings were classics in the perfection of phraseology, clear and plastic in the portrayal of disease and had a rare freshness from the facts drawn from his own experience.

Richard C. Cabot (1868-), the eminent clinician, has contributed a great deal to the development of internal medicine. The idea of teaching by case-histories, introduced by Cabot, has been recognized as a valuable method of teaching internal medicine. His Yankee sobriety, his severe and austere ideals, are not the traits that make for rapid and showy success. The character of Cabot is one of rare nobility. He is a puritan of unadulterated stock and the type of man whose gift of genius rises to lofty heights and great achievements.

Much good work has been done by George Dock, who is, perhaps, one of the

most practical of present-day internists. His work as a teacher and associate has endeared him to thousands of medical men throughout the South, North and West, for it was in these sections of the country he had his greatest activity.

In America, such teachers and practitioners as the Bowditches, the Jacksons, the Minots, the Shattucks, James Anders, John H. Musser, Charles F. Hoover, John McCrae, H. C. Wood, Hobart A. Hare, Henry Christian, S. Solis Cohen, John J. Abel, and other eminent physicians, have made invaluable contributions to the progress of internal medicine.

Internal medicine is concerned with two essential factors of paramount importance: clinical diagnosis, and treatment. Treatment, however, is well outlined in most cases and is, therefore, a secondary matter.

DIAGNOSIS

The purpose of a diagnostic survey is to determine the presence or absence of certain signs or symptoms, drawing inferences from these findings, analyzing the implications of these inferences, testing their value, and finally making synthetic deductions referable to the condition of the person.

Clinical diagnosis is an outgrowth of opinions, beliefs and facts, regarding health and disease, developed by physicians over a period of centuries. It is the result of experience acquired and handed down from generation to generation. The study of the natural course of disease and of prognosis, amplified by further diagnostic acumen, has resulted in the general growth of diagnostic knowledge.

The science of medical diagnosis treats of the phenomena and laws of disease, elucidates the processes of pathologic phenomena, analyzes each phenomenon, and correlates the anatomic, physiologic, biologic, chemical, physical, psychologic and social causes of disease conditions. It is interested in established facts, in regular sequence.

Progress in the art and science of diagnosis evolves from the work of clinical and laboratory investigators, each in his own specialty and limited to his own particular field. From those observations and experiments result the mass of material to be passed to the test of differentiation, out of which is drawn the truths of scientific effort. The results are set forth in comprehensive papers in medical journals and

textbooks and the knowledge made accessible to all physicians who desire to avail themselves of current and progressive medical practice.

In order to discover the laws governing health and disease, we must use the methods of science which conform to the principles underlying such natural forces as heat, light, electricity and magnetism. A knowledge of the fundamental sciences, astronomy, physics, chemistry, biology, psychology and sociology, is prerequisite to the logical coordination of phenomena found in health and disease.

In both normal and abnormal conditions of the human organisms, the study of the physics of light, heat, sound, electricity and magnetism bears an intimate relationship to diagnosis. The diagnostician could not interpret the phenomena of fever and of metabolism without a knowledge of the effects produced by heat on the body, the laws of transference of heat and the laws governing transformation of heat into other kinds of energy.

The thermometer, the colorimeter, the microscope, the polariscope, the photographic camera, the ophthalmoscope, the speculum, the cystoscope, the sigmoidoscope, the bronchoscope and the refractometer—instruments of precision—are applications of physics to clinical diagnosis. Instruments of precision such as the stethoscope, the microphone, the phonocardiograph and the tuning fork are direct contributions of sound to diagnosis. In recent years, the various applications of the galvanic and faradic currents to diagnosis have rendered valuable service. The x-rays are indispensable in their manifold uses as a diagnostic agent. Applied physics of heat, light, sound, electricity and magnetism are an essential part upon which the science of diagnosis is built.

As diagnostic work gradually becomes more precise, the science of chemistry assumes importance as fundamental as that of the science of physics. In process of development, physical chemistry correlates the physical properties of substances with their chemical composition. This knowledge is valuable in a consideration of the metabolism of the human body. Inasmuch as chemistry has become a part of almost all human activities, it is even more imperative that the modern diagnostician be familiar with the principles and methods of chemical science. Chemistry in all of its applicable

phases should be made a part of his preparatory education. The use of the principles and terminology, practical acquaintance with apparatus and the technic of chemical manipulations, and a knowledge of chemical methods are essential.

It is only necessary to mention the chemistry of the proteins, carbohydrates, fats, mineral substances, nucleins, purins, pyrimidins, and the chemistry of the vitamins and its relation to metabolism, to realize the fundamental importance of physical and chemical science for the future of biological and medical sciences.

MANY SCIENCES INVOLVED

The science of biology is especially necessary to the progress of internal medicine in a study of the processes of evolution, heredity, variation, adaptation and selection. Anthropology supplies a great deal, in facts and phenomena that deal with health and disease, and is recognized as an adjunct to diagnostic knowledge.

During recent years, the science of psychology has assumed an important relationship to diagnosis and treatment. The science of diagnosis is, in marked degree, dependent upon observation of the behavior of patients and necessitates inquiry into their mental states in their cognitive, effective and conative aspect. It is quite essential that the student of diagnosis have a working acquaintance with the psychology of animals, of children and of the normal human adult; with the psychology that deals with peculiarities of individual minds; with abnormal psychology, and with social psychology that studies the mass or group mind and their influences upon individual minds through processes of suggestion, imitation, sympathy and interpretation.

The science of sociology is also closely related to diagnosis and a fairly comprehensive knowledge of its methods and principles is essential to the practice of diagnosis. Sociology studies the structure, functions and genesis of the social body. It secures its data from such special social sciences as ethnography, ethnology, technology, archeology, demography, history, economics, jurisprudence, politics and ethics.

The diagnosis of disease, organized as a science, now includes: (1) recognition of disturbed function in disease; (2) recognition of the site and nature of the structural changes in disease; (3) recognition of the causes of disease; and (4) recogni-

tion of the relation of causes to the sequence of conditions in the disease. The forces concerned are physical, chemical, biotic, psychic and social, and the data accumulated therefrom by workers in all the medical sciences are gradually being summarized, arranged, and classified by diagnosticians, so that the laws and principles underlying them are becoming an applied science. For this reason, pure science, applied science and art have progressed in reciprocal relationship.

The older methods of inspection, palpation, percussion, auscultation and mensuration have been amplified by the methods and instruments of mathematics, chemistry, biology, psychology, physics, anatomy, physiology, pathology, bacteriology and immunology. These have become expanded by instruments of precision and special methods, beyond the dreams of the physician of a quarter-century ago.

Many physicians have acquired an extensive knowledge of various phases of diagnosis, but have not been able to exercise the art of diagnosis. This is owing to lack of a comprehensive grasp of fundamental laws and principles, or to insufficient acquaintance with the practical-technical methods of diagnostic procedure. The artist must have the ability to do diagnostic work quickly, accurately and effectively, and the capacity to produce diagnostic results that are adequate to the purpose in view.

In order that the requirements of a diagnostic study be met, the procedure must be prolonged and complex, and divided into several different stages: (1) the recognition of a problem to be solved and a feeling of diagnostic difficulty; (2) the accumulation of data that help to locate and to define the diagnostic problem; (3) the consideration of the data (accumulated, summarized and arranged), that suggestion of a possible solution of the diagnostic problem may occur to the mind; (4) the elaboration, by reasoning, of the detailed bearings of the several suggestions of solutions; and (5) the careful testing of the suggestions thus minutely worked out as to their bearings, by comparison with the facts accumulated, supplemented, when necessary, by other facts obtained by further observations and experiments, this careful testing leading to disbelief in the unverified suggestions and finally to belief in the suggestions that are found to be

valid; in other words, the arrival at diagnostic conclusions.

It is a long trail from the theurgic temples of medicine in the plains of Sumaria to the excellent hospitals of Europe and America. The devotees of natural and physical science have accomplished more in scientific research upon medicine during the past half-century than has been advanced in all previous history. There has been a transcendent development from theurgy

and philosophy to the applied science of internal medicine. The wheels of the Gods have ground slowly, but they have ground exceedingly fine.

The applied science of internal medicine is only in the springtime of its creation. In consequence, further progress in internal medicine is dependent on the triumph of organized, coordinated minds in the natural and physical sciences.

Medicine in the Future

By C. P. TILLMONT, M.D., Centerville, Ia.

IN PRESENTING the following dream of possible developments, there is no intention to discredit the glorious achievements of medicine nor to criticize its present application to the health interests of the people, but rather to suggest that the mind of the people will reach a state of evolution where it will admit the science of medicine as capable of absorbing all that is good out of the various mechanical, physical, mental and spiritual efforts directed to the alleviation of human disease and suffering.

As I envision this ideal State, it seeks to protect the sick man in his misfortune, offering to him the services of the physician, in a time of dire need, without compensation, as a common right of the citizen.

It seeks a thorough education of the physician and surgeon, and out of them develops the specialist, by practice under strict supervision, holding to the theory that a specialist is the end-product of practice and experience. It takes six years to educate a physician, but it takes twenty-five years to develop a specialist.

It seeks to embrace all that Medicine and Surgery have pronounced good, and makes their direction a command for an advancement, under the patronage of a liberal government and under ideal conditions.

It features, especially, preventive medicine, as the greatest possibility for the elimination of human disease. It provides liberally for the doctor, makes him an essential element of society, a nobleman, and takes Medicine out of the dangers of commercialism, while leaving it open to achievement.

It seeks to demonstrate that disease,

sickness and death should not be personal liabilities but, being common woe, are consequently a common liability, and that every life saved, every sickness or accident prevented, is an asset to the Nation and worthy of a reasonable effort, at the common expense.

It leaves the doctor free to advance in any direction in his chosen profession and entirely eliminates fee splitting or exploiting the sick man.

It places at the command of the doctor every convenience and every appliance which the average practitioner lacks, under our present system, which, of itself, is a great handicap.

There are, in my ideal State, no county poor, no pauperism, no venereal diseases, hereditary or acquired, no feeble-mindedness, no imbecility, no inebriates, all of which are largely eliminated by close scrutiny of records by a single cooperative organization.

The thesis could be much enlarged by making subjects of the different departments of medicine and surgery, but this will be sufficient, I hope, to direct the mind into a channel which might easily lead to a Utopia of Medicine and Surgery at no distant day, to the glory and honor of the great heroes and martyrs of Medicine of ages ago and to the credit, comfort and happiness of the living and those yet unborn. I offer the opinion that not until we have reached this stage in our evolution will we have reached the Ideal.

A PROPHECY

The sciences of hygiene, sanitation, medicine and surgery had so proven themselves, even to laymen, that a law had been passed

declaring void the systems which had been in vogue before the year 2000, which had based the cause of disease upon false theses, and with it all treatment based upon those theses. Both were declared by law to be non-existent, upon the hypothesis that health should not be made a subject of barter, nor should it be commercialized, but rather that it should be treated upon the principles of the proven system of medicine which had been in vogue and scientifically successful for 2000 years. Commercialism had, however, so developed in it, and abuses were so numerous, which seemed to threaten and circumscribe the system itself, than an amendment to the constitution was adopted, declaring sickness and death to be common woe, and provided for in the Constitution of the United States in the following manner:

"It shall be one of the foundation principles of this, the Constitution of the United States of America, that disease and death are common woes, and that they are a liability of the United States of America, while health and life are its assets. Therefore, be it provided that *Each State* shall equip and maintain a University of Hygiene, Sanitation, Medicine and Surgery, in which institutions doctors of these departments of Medicine shall be developed, of a sufficient number to man the hospital units, which shall hereafter be known as the County Institutions of Health and which shall consist of divisions, to be named as follows: Institution of Hygiene, Sanitation and Research; Institution of Insanity, Feeble-Mindedness and Degeneracy; Institution of Maternity; Institution of Contagion and Infection; Institution of Surgery, with departments in the specialties; Institution of Medicine, with departments for the brain, the ear, the eye, the air passage, the stomach, the intestines, the genito-urinary and glandular systems, heart and general circulatory system; and finally, the Institution of Post Mortem Examination and Experimentation, and any other institutions necessary to investigate, treat, or combat disease.

"The State shall maintain and equip housing facilities, so that not more than two students or two doctors or a doctor and his family may occupy said domiciles.

"The State shall equip and graduate a sufficient number of males and females, according to certain standards of education, which will hereafter be defined, and which are fundamental from the beginning of the education of the child designed to become a Doctor of Medicine, Surgery, Sanitation and Hygiene, or its different divisions, as shall be declared necessary to properly qualify the doctors for the treatment of disease, and that said institutions shall keep the quota filled by volunteers, and, if need be, by draft, to produce a sufficient number from each community, based upon the population, to properly care for the sick and do the work necessary to promote health.

"These persons shall, during the student period, serve as nurses; upon graduation, as interns; and finally, as assistants in the Mother

Institutions, until they shall be regarded as competent to fill the positions designated for them in the County Institution. If found incapable or to lack application, upon a two-thirds vote of the faculty of said Institution the student shall be honorably discharged, and a fund provided of a sufficient amount to educate him in some other line of endeavor.

"Each doctor receiving his diploma shall serve, except in case of a disability or inability, from the age of 25 to the age of 65 years, after which he automatically becomes a member of the Board of Regents, hereafter defined. The salary shall be of sufficient amount to maintain him in comfort and as is fitting to his station in the community, for his natural life. He shall serve, except in case of disability, for ten months in each year, with one month given over to rest and recreation and one month for postgraduate study in his particular specialty. If he desires, he may elect to do research work, and be maintained as before.

"The faculty shall be created out of the personnel of the medical and surgical general fraternity, by seniority, according to specialties. The students, both male and female, shall, as a part of their education, serve as nurses during their student period up to their internship; as interns until they shall be regarded as finished physicians, capable of working in a position or specialty for which each is selected; and then an assistants to the various chairs, after which each may be appointed to a chair or a professorship. (This is restated to emphasize this particular point. It is essential to the finished doctor.)

"There shall be no other institutions into which patients may be received, and no methods of treating disease shall be countenanced, except by the consent of the Faculty of Medicine and Surgery and the Allied Sciences and Arts. Admission into the Institutions or hospitals shall be by rotation; all beds, all wards, all rooms, shall be the same and all persons sick or injured shall be regarded as patients and not as persons. Under no circumstances may presents or gifts be made or received, and in no case shall it be permissible that anything be received as compensation for the care or treatment of disease or for special attention.

"Finally, each patient dying, shall be furnished a first-class casket, each of the same value and design, whether the patient be rich or poor, and a burial lot, as shall hereafter be defined, or other method of disposing of the body as shall be, by law, declared as proper from a hygienic or sanitary point of view."

THE FIRST PATIENT

I chanced to be the first patient received into the "Appanoose County Health Institutions." The control lever on my two-passenger plane had broken, but the safety device for descending, a great parachute which held the entire plane, had made it possible for me to land. Unfortunately, however, I could not avoid a ditch, and the plane tipping to the side, my leg was caught and fractured in the lower third. Fortunately the radio alarm was within

reach. I took down the receiver, gave the emergency department of the Institution my location and, in ten minutes, a wrecking plane and an ambulance plane had landed on the forty-foot cement roadway, about 50 feet from where I lay.

I was given first aid, which consisted of $\frac{1}{4}$ grain of morphine and a good stiff drink of "youthful stimulant," which had, until the year 1930, been called "hooch" and had been prohibited, but now was regarded a stimulant and a food, in proper amounts, and valuable for fatigue, but a poison when taken in large quantities and an irritant when continued.

In ten minutes I was carried into the receiving ward, having been lifted, on a special fracture stretcher, into the ambulance plane. From the receiving ward I was taken to the x-ray laboratory, where I was placed under a great fluoroscope, which was so arranged that the vision was directly in front of the operator and which did not interfere with the manipulations necessary to reduce the fracture. The leg was laid in a splint, which was attached to a special fracture-bed-cart, and extension was applied, after which I was wheeled into my quarters in the fracture department and remained in this bed, being brought to and from the x-ray laboratory daily, for treatment by diathermy and galvanic electricity and for observation by the x-rays.

Four weeks after this time I was permitted to be about in an ambulatory splint, receiving these treatments and passive motion daily, until I was able to make a study of the Appanoose County Institutions, which are grouped, each on 160 acres of ground, and are located on desirable sites from one to five miles from the county seat.

THE INSTITUTION OF HYGIENE AND SANITATION

The Institution of Hygiene and Sanitation is a very interesting place. Here the water from each well or other source of water supply is thoroughly analyzed three times during the year (a State requirement), though all the wells have been located by this department and all the wells having shown contamination from barns or outhouses have long since been discontinued.

The outhouse or privy drainage is to a water-tight septic tank, as is the drainage from barns. After having been made harmless by septic tank treatment, the

contents are drawn into tanks and sprinkled, as fertilizer, on the land. All garbage and waste of any kind is incinerated at once, in electric incinerators which are furnished by the State to each home in the county. All dead animals are required to be taken to the crematory and completely destroyed. Such crematories are located in each township and it is required by law that a report be made to it in case of a dead animal of any sort, when a closed truck is sent and the animal is taken to the crematory.

All weeds and grass on highways are required to be cut weekly; no weeds are permitted to develop on farms; and no cesspools or stagnant water or ponds are permitted to exist. By this method, the common house fly is now, with the mosquito and other dangerous insects, extinct.

All animal disease is treated by isolation, in the Hygiene and Sanitation Hospital, one of the county Institutions. Therefore, disease among herds of cattle, swine, sheep and horses does not exist. The care of milk, from the milking to the end-product, butter and cheese, is by rule of this department, which is absolutely specific, and any infringements make the offender subject to a fine, withdrawing the right to maintain a dairy.

Along the highways a system of irrigation is in vogue, which not only keeps moisture sufficient for irrigation, but, at the same time, flushes the forty-foot concrete highways and the foot paths or walks at the side.

The slaughter of animals and the care of meat, its preservation and its distribution and sale are carried on through this department, in the township plant from which the entire township is supplied. The surplus is taken over by the County Department, which transfers it to the state. There is no waste in either meat, butter or eggs, as the refrigeration is so perfect that these might be preserved for all time. In this manner transportation is saved to the home of the consumer also. The disposal is through the state department, which handles all food supplies, vegetables and fruit. These are handled on the same basis and through this same department. The price is regulated by the cost of production and a reasonable return is allowed, based upon the overhead and a return of seven percent on the investment.

The Department of Hygiene is constantly active in issuing bulletins on the care of the nose, teeth and other avenues

for the entrance of infections which cause disease. These bulletins are mailed monthly to each household and are posted in a place required by law. In this manner many diseases are eliminated—asthma, for instance, by the destruction of weeds and use of antitoxins. Tuberculosis is entirely eliminated from cattle by the strict rule of destruction of all diseased animals by cremation.

This department also deals with the analysis of food and issues diet lists, in accordance with the type of individual requiring the diets, particularly to patients with diabetes, to whom they also furnish the necessary insulin. This is done through the aid of the Department of Domestic Economy which, in turn, has a monthly bulletin, issued directly to the housewife of each family in the county. A special bulletin on infant feeding is also issued to families with children. All children with dietary difficulties are sent to the

Children's Hospital, as any child who is not gaining in weight is considered as a sick child.

This institution is probably the most important of the group as it aims to prevent sickness, and thereby to prolong life.

Research is going on in the direction of insects, parasites and bacterial diseases, in vegetable plant and animal life; but the chief object is the health and life of the human family.

A discussion of the other activities of the Institutions of Health, as I see them in my visions of Medicine in the future, would occupy too much space, but I hope that these fragmentary outlines will stimulate thought as to what can be done to bring about this or some similar condition of affairs which will safeguard the interests of the public and of the medical profession which, in the last analysis, must stand or fall together.

CHAOS IN MEDICAL PRACTICE

Medical practice is far behind the plans that have been developed in industry and in many other forms of public service. It will require the most searching study of the facts and the application of these facts in the true spirit of the experimenter if we are to develop conditions that will make it possible for physicians to meet their own problems and for a single illness not to become a prolonged handicap to an individual or to a family. Perhaps the medical school is not ready yet to insist on a training in economics, government, political science and history, and the relations of medicine thereto; but, unless such training and thinking are soon started, the present chaos in medical practice will inevitably make for high charges on the sick and an inadequate return to the physician.—RAY LYMAN WILBUR, M.D., in J.A.M.A., April 27, 1929.

The Sheppard-Towner Law

The average showing of the Sheppard-Towner states is so much poorer than that of Illinois, a state that refuses to sell its birthright, that the advocates of federal meddling with the sovereign rights of the states are greatly annoyed. The State Medical Society of Illinois believes that the practice of medicine should be supervised by the states and that the attempt to turn over the health matters of maternity and infancy to a lay federal bureau at Washington, not manned by medical men, but thoroughly well-ladied by spinsters, is, in many ways a vicious experiment.—DR. C. E. HUMISTON, of Chicago, in Illinois M. J., July, 1930.

PHYSICAL THERAPY AND RADIOLOGY

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A RADISH OR AN ACORN?

"ANYONE can plant radishes; it takes courage to plant acorns and wait for the oaks."

In Europe the electrotherapist is almost invariably an experienced physician trained in electrotherapy in the hospital department under a well qualified electrotherapy department head. He thus becomes theoretically and practically grounded in this therapy, because of expert training and abundance of diversified clinical experience.

The European physician in good standing would rarely, if ever, consider practicing electrotherapy without such thorough training in this special branch of medicine. It would be inconceivable, abroad, to find a hospital without a well-equipped physical therapy department and without a thoroughly qualified physician and physical therapist in active charge of that work.

Physical therapy connotes many differing branches; hydrotherapy, x-rays, and radium, require much expensive equipment and much specialized study and attention. In the United States, the term electrotherapy or electrology is severely frowned upon by those who do not take the care to distinguish between the expert exponent and those who have brought it into unfav-

orable publicity by the triple, although divided, derogation of unrestrained enthusiasm, imperfect training, and "authoritative" damning by the prejudiced and superficially informed (clinically) ultrascientist. In England, especially, electrotherapy is recognized as a branch of physical therapy important enough to be distinctively assigned its own particular department and supervising medical director.

The physician desirous of specializing in electrotherapy may take a six-months course at either Cambridge or Oxford, and thereby become eligible to the degree of D. M. R. E.—Doctor of Medical Radiology and Electrology. He or she who elects to become a "technician" is required to take a six-months course in anatomy, physiology and physics, upon the satisfactory completion of which, an additional six months are required in the study of "Medical Electricity"—direct current, ionization, faradic and sinusoidal currents, diathermy, high frequency, light and heat, ultraviolet radiation, etc. After a successful examination, the candidate is entitled to be registered and placed upon the roll of "Bio-Physical Assistants" of the Society of Apothecaries (B. P. A.)

In the United States a large majority of

physicians are liberally equipped with electro- and photo-therapy appliances, but with meagre theoretical and clinical training therein. Many hospitals have physical therapy (electro- and photo-therapy) departments, nominally in charge of a physician, but practically supervised by the head technician. There is too much theoretical teaching; too much pure physics and "in vitro" experimentation, not adequately balanced and tested by prac-

tical, clinical application. Puerile jealousies and acrimonious dissension are everywhere blighting apparent. Only united and unbiased appraisal of all theoretical and practical sources of physical therapy education and practice—in part and as a whole—can develop this essential portion of medical art into an assured scientific sturdiness.

J. E. G. W.

Galvanism and the Female Pelvis

By J. U. GIESY, M.D., Salt Lake City, Utah

THIRTY years ago, Dr. Tod Gilliam, remembered chiefly for his round ligament operation, was in the habit of referring to the art of the specialist in female ailments as "working the pelvic lode." Such an allusion smacked of mining operations. And it must be confessed that much of that work done in the female pelvis at that time bore a strong resemblance to a mining operation. The specialist did not blast, but he certainly dug and scraped and probed and gouged.

Mining methods have improved since then, however, and so have the methods of the gynecologist. Where yesteryear the chief tools of the craftsman were the pessary, the tampon, swab, curette, and scalpel, it is, today, possible to show amazingly good results by the use of the galvanic current, in a surprisingly large percent of those cases of female pelvic disease which we so constantly meet.

In my belief, no more than a lack of understanding of this self-proved and self-proving agent lies behind its employment by so small a proportion of the profession even yet, despite the fact that it has been giving consistently good results, in the hands of men who understand its employment, for over forty years. Once familiarity with it and its availability is arrived at, its users come to regard it, in a very large number of pelvic conditions, not only as a means of obtaining relief, but, indeed, as a method of choice.

Let me stress the word familiarity at the

start. It is as essential to the correct employment of galvanism as is the physician's knowledge of therapeutics, or the surgeon's well-developed technic. Only by understanding, in either instance, can one hope for good results. Too many times, even yet, high pressure salesmanship results in the doctor's installing a piece of apparatus, of which he knows nothing, and then blundering through the discouraging stages of disappointment, disgust and disuse, merely because he has failed to ground himself in the fundamentals so necessary to success. This is, unfortunately, a situation which only time and intelligence can adjust.

Primarily, success in the use of galvanism must depend on a knowledge of the physics of the current, a well-worked-up diagnosis (unless, of course, the latter is so self-evident that it slaps one in the face) and a proper and intelligently-applied technic.

POLAR EFFECTS

Let us consider the physics of the current first. Chiefly we will find a characteristic known as *polarity* of interest. In galvanism, thanks to the fact that this is so well called the *direct current*, polarity is as definitely permanent and as definitely opposite in nature as are the poles of the globe on which we live. Negative is negative *always*, and will always produce its negative effect. The positive is equally permanent in character and effect; and the effects are always the opposites of one another—that is, the poles are antagonists. For example: The negative polar effect is

to dilate vessels and widen the blood stream; the positive will narrow it, by causing the circulatory channels to contract. The negative softens and relaxes tissues and floods them with fluids; the positive firms them, tones them and squeezes fluids out.

Clinically, the negative pole promotes hemorrhage and drainage and increases inflammatory reactions, by causing the tissues to become more and more engorged; the positive pole checks bleeding and inflammatory conditions, by a directly opposite effect. The negative pole sets up an alkaline reaction in the tissues immediately about the point of application; the positive establishes an acid reaction, to an equal extent. The negative pole ionizes acids and halogens into the underlying tissues; the positive pole ionizes metals and alkaloids.

At a glance, the two poles are constant antagonists. This I repeat in order to stress the point. And, with this fact firmly established in the understanding, one needs but a correct recognition of the existing pathologic changes to make an intelligent choice of the pole to be used in his attack.

DOSAGE AND TECHNIC

This being decided, the final consideration becomes one of technic. This must include, besides the choice of pole, the method of its employment, as affecting dosage and manner of application. Dosage may be easily determined, as to quantity, by multiplying the time by the number of milliamperes used. For example: the dosage of ten milliamperes for three minutes or one milliampere for thirty minutes is the same. Both give thirty milliampereminutes.

Regulating dosage, however, is not so easy as this. Always we must take into consideration the individual patient's tolerance. Painful sensation should be avoided to the greatest possible extent, and, largely, we must be governed by this factor. The patient must give her confidence, and this we must win by a considerate manner and a carefully judged method of application. Electrodes must be carefully applied; be kept well moistened; be fitted into a comfortable position; and the dosage must be increased slowly to the required strength, and *similarly cut off*. Quick step-up and cessation of current flow means uncomfortable sensation—a thing it is quite possible to avoid.

Since the patient is a person already undergoing discomfort, either physical or mental or both, this is a point we should never fail to regard. Moreover, many persons have an intense fear of electricity *per se*—the mere name is enough to set their entire psychic entity in revolt. Consequently, it is advisable to lead them gently into a realization that their fears are unjustified, which can hardly be done if they are needlessly hurt. Gentleness of manipulation, toward both minimizing sensation and actual tissue insult, is another point to be taken into the equation. With the patient comfortably disposed on the treatment table; with her nervous resistance quieted by soothing, confident attitude on the operator's part; with the electrodes properly applied or introduced, and the current gradually built up to the required strength, very little actual discomfort should be in evidence.

Another point frequently disregarded is that the skin surfaces beneath the body electrodes should be cleansed of all excessive perspiration or other body secretions before the electrodes are bandaged into place, and that any abraded areas or any small pimple or similar eruptive point should be protected by a bit of adhesive tape or similar non-conductor, which will prevent the current from penetrating to a painful extent through this less-resistant integumentary spot.

With these salient factors in mind, let us consider the pelvic conditions which may be attacked with a large hope of success, and let us list these conditions under the pole we would choose in making that attack.

NEGATIVE POLE INDICATIONS

The indications for applying the negative pole are:

Amenorrhea; dysmenorrhea — from infantile-type uterus or hyperesthesia of the innervation of the internal os (virgin type); post-inflammatory conditions; **chronic salpingitis**; oophoritis (old cases); fibrotic changes following cellulitis (to stimulate absorption of organized fibrotic end-deposits); postoperative reactions, resulting in loss of motility of the uterus and adnexa, such as, at times, appear after round ligament operations or operations on the adnexa; postoperative adhesions (to soften and relax). In the last three conditions, sine wave currents may be

added with benefit, as the final step of each seance.

POSITIVE POLE INDICATIONS

The indications for applying the positive pole are:

Menorrhagia, simple or "juniorum;" **metrorrhagia**; **subinvolution**, post-partum or post-abortion; **endometritis** (sometimes following preliminary negative application, to destroy the intra-uterine mucosa); uterine displacements (without flexions), where the musculature is flaccid, markedly relaxed and engorged by a low-pressure circulation); **endocervicitis** (ionization of copper, zinc, mercury or silver); **cervicitis**; **follicular occlusion** of the cervical follicles (by zinc needle puncture); **cervical erosions**; **vaginitis** (moist ionization, by vaginal pack); **verruca vaginalis** (positive pole coagulation); **fibromyomas**.

A glance at these lists will reveal an interesting fact, as based on polar choice. In the negative list we find conditions wherein benefit will depend upon tissue softening and an increase of circulation, whereby cell nutrition and, consequently, cell function is improved. These are conditions in which fibrotic changes, with their circulatory restricting effects, are marked, and the indicated changes are exactly those which the negative pole will produce.

In the positive listing, the opposite condition holds. Here pathologic changes depending upon inflammatory or, at least, a widened circulatory path exist, and relief must depend upon a narrowing of the blood vessels, plus a re-establishment of normal tissue tone, which the positive pole is capable of affecting, once the causative factors are overcome.

This is a statement to be accepted in a general sense, of course. The effects of ionization in infectious conditions, are essential to the correcting of the local pathology, in a large percentage of the conditions in the positive list, and complete success must depend upon the destruction of the infecting elements. Yet

this, too, the positive current, through its quality of ionization, will bring about.

There are instances when the two polar actions must be combined, as in long-standing maladies, in which some preliminary negative stimulation may be an advisable first step. These are conditions, the meaning of which can only be learned by a carefully evaluated experience.

ELECTRODES

And now, a word as to electrodes. Many, of various forms and prices, have been devised and advertised. But, in reality, they may be greatly simplified. Practicability is the key note, and nothing is better for a skin electrode than a thick pad of gauze or a soft, thick towel, thoroughly moistened and laid upon the desired surface, *smoothly*. Over this a metal plate (block tin), of the size desired to carry the intended milliamperage, is placed and bandaged into firm position. For the active electrodes, within the pelvis, molded metal tips of zinc, copper or silver should ordinarily be used. The first two may be amalgamated with metallic mercury when desired.

The metal portions should be kept clean, bright and *smooth*. As ionization from them consistently takes place, they will become roughened, and when this occurs their effectiveness is cut down to a considerable extent, because contact of the metal surface, like that of the moist, indifferent pad, should be even and firm, in order to obtain an even distribution of effect. A roughened electrode gives a different degree of contact on each irregular point, and consequently breaks up the current stream, since electricity, like any other force of nature, follows the line of least resistance between two points.

This paper may appear rudimentary, to the well-informed reader, but I wished to place emphasis upon certain points which are quite essential to success, but which are, all too frequently, either neglected or overlooked.

Medical Arts Bldg.

MECHANICAL DIAGNOSES

The practitioner of Medicine who is looking for a method by which he can throw in a specimen, turn a crank, and produce an exact clinical diagnosis, will still be looking for that method at Doomsday.—
DR. W. E. OGDEN, Toronto, Can.

CLINICAL MISCELLANY

Electrosurgery*

A RECENT survey of the surgeons of this country, using electricity in the operating rooms, gave very interesting information. The object of this survey was the discovery of the kinds of electricity really necessary and desirable in surgical work.

It seems that there have been two distinct schools in electro-surgery; the cutting school and the cooking school. Between these there is more or less of a fixed gulf; and what one has found useful the other refuses to investigate. The cutters require fast cutting with minimum coagulation, for the skin, muscles, etc., so that they may perform rapid and extensive dissections and obtain primary healing. They further require slow cutting with maximum coagulation, for the brain, liver, pancreas, lung and other organs that are delicate in structure and abundant in blood supply. The cookers require a heavy current that is easy to insulate, for electric coagulation of large or small areas. They also need a current similar to the original Oudin current, for fulguration and desiccation of superficial lesions.

Only a few surgeons were trying to combine the good points in both schools. Of these, the brilliant work of Dr. Harvey Cushing, on intracranial tumors, stands out as the greatest accomplishment of electro-surgery of our time. He used two machines—a cutting and a cooking machine—controlled by one switch-board. He called attention to the need for cutting currents of various degrees of coagulation, as well as a coagulating current. He also stressed the need of a smooth current of suitable wave form that would eliminate muscle jerking and convulsions.

The result of the survey clearly showed the necessity for both cutting currents and coagulation currents; and, to gain speed, it seemed necessary that these currents operate synchronously, without the need of a special operator to throw switches or change controls. With this object in view, extensive research was made, involving all

known spark-gap, high-frequency generators, as well as the common radiofrequency transmitters.

It was found that it could be done better by tubes. The result is a small, dependable generator that gives three cutting currents, two coagulating currents and, in addition, a fulgurating current similar to the original Oudin resonator current. The cutting and coagulating currents operate synchronously and without interference, so that, as the surgeon cuts, the first assistant may use the coagulator to dry up the bleeding points not sealed by the cutter. The coagulating current is of low voltage and easily insulated. A momentary touch is sufficient to seal ordinary bleeding vessels, but when large vessels are encountered, they are grasped by artery forceps and the forceps are touched with the coagulator. This seals all tissue within the grasp of the forceps.

Sponging has been eliminated in favor of an insulated suction tube, which keeps the field dry without trauma. In deep areas and in friable tissue, such as the lung or the cervix uteri, a momentary touch of the coagulator to this tube seals any bleeder at the exposed tip.

It must be borne in mind that great heat is given off and, if the coagulating current is used too freely, primary union cannot be expected. This is especially true of the skin and mucous membranes.

NELSON H. LOWRY, M.D., F.A.C.S.,
Chicago, Ill.

The X-Rays and Gastric Disorders

Radiography has revolutionized our knowledge of the stomach and, incidentally, has brought back the treatment of most cases of ulcers from the surgical to the medical side.

The value of the x-rays in the diagnosis of gastric disorders needs no emphasis, rather is there need to emphasize the statement that, in 90 percent or more of gastric disturbances, a correct diagnosis can be made without the use of x-rays. The x-ray examination of the stomach is no

*Abstracted from article in *Surg. Gynecol. and Obst.*, Jan., 1930.

simple matter, it requires a radiologist of special skill and experience to avoid the many fallacies. The x-rays should disclose the freedom and rate of entry into and exit from the stomach, as well as its size, tone and outline. Only a small proportion of those who come for treatment of supposed gastric ailments have any organic disease of the stomach at all.—Dr. I. R. COLLINS, in *Practitioner*, Lond., June, 1930.

Foam Baths and the Use of Saponins

Foam baths, produced by the addition to the hot-bath water of a saponin solution, are enjoying a certain amount of popularity in Europe.

In *Brit. J. Actin. and Physiotherap.*, May, 1930, Dr. L. Shillito remarks that there can be no objection to the use of a saponin solution in this way, although it is doubtful what chemical or other advantage it can have over an ordinary water or medicated bath.

There is justification for the internal administration of various drugs with foam or saponin solution as a vehicle, as these have a powerful effect in lowering surface tension and this favors maximum drug absorption.

Roentgen Therapy Shortens Treatment Time

In a case where x-ray therapy must be supplemented by surgical or other measures, there is at least the promise that the time of treatment can be shortened from 25 to 65 percent.—Dr. P. H. BROUDO, Detroit, Mich., in *Arch. Phys. Therap., X-Ray, Radium*, Apr., 1930.

Radio-Wave Fever

Preliminary tests have shown that, with the use of a 30-meter wave, oscillating 100,000,000 times a second between the plates, with a variety of technical precautions, it is possible to cause a fever in man rapidly, without great discomfort and to a degree high enough to be of presumptive therapeutic value. Rectal temperatures of 105° F. and higher have been attained in 60 to 80 minutes. . . . This method is still in the experimental stage.—Edit. in *J. A. M. A.*, May 31, 1930.

X-Ray Diagnosis

The thing you see first on an x-ray film—the easiest thing to see—is generally the very thing you are looking for; not the things that are hard to see.—Dr. WILBUR H. GILMORE, Chicago.

Physical Treatment of Neurasthenia

Neurasthenia is abnormal fatigability—a physical malfunction of the whole organism. I have found that the best and most permanent results are obtained by a wise combination of internal cleanliness (detoxication) and the proper exercise of the muscular system by physical therapy. A physical therapy regime leads most naturally to the restored use of every function and toward the recognition of plain rules of health, which every neurasthenic must adopt if he is to become and to remain well.—Dr. G. L. SCOTT, London, Eng., in *Practitioner*, Feb., 1930.

High Blood Pressure Treated by Intestinal Douches

Upon the assumption that, in many cases, high blood pressure is due to colonic auto-intoxication, 65 cases (without evident renal defects) were treated by intestinal douches, continued for 2 to 4 weeks. Strong sulphur mineral water (Harrogate) was used, in quantities from 20 to 40 ounces, at a temperature of 100-104° F., and generally at a pressure from 18 to 24 inches.

Blood pressure readings were taken before and after the douche and showed decreases varying from 10 to 40 mm. of mercury, the pressure rising again to nearly the original figure in the course of 12 hours but showing, over a period of days, a definite decrease (32 to 37 mm. systolic).—Dr. A. A. BISSET, in *Practitioner*, London, Feb., 1930.

Negative Reports

I realize that so long as human nature is what it is, the roentgenologist who depends on referred work will have to have rare courage and idealism and a strong feeling of responsibility to his fellow men before he can do as he should do and write "normal digestive tract" on most of the reports which he sends out.—WALTER C. ALVAREZ, M.D., in "Nervous Indigestion."

RECENT ABSTRACTS

Notes From First International Congress of Actinology

Dr. A. B. Hirsh, of New York, contributes to *Internat. J. Med. & Surg.*, June 1930, a report of the proceedings of the First International Congress of Actinology held in Paris, July, 1929, from which the following notes, taken from his abstracts of papers read, are extracted:

The skin acts as an endocrine gland, the actinic rays performing a role in the great phenomena of life, notably growth, histabolism and defense of the organism.

By treating laryngeal tuberculosis with universal light baths, it is possible to cure the malady, but it appears that the treatment would be shortened by appropriate local treatment (excision or galvanocautery) in addition. With light alone, 55.6 percent of patients are cured, compared to 84 percent with light plus rational local treatment.

The figures of recoveries indicate that *erysipelas* in children should be treated by a 1 to 1½ erthema dose from the mercury vapor arc in quartz.

The combination of calcium with ultraviolet rays produces results, in *menorrhagia* and *metrorrhagia*, superior to those obtained with either agent alone.

In infectious skin diseases, very favorable results are obtained by using the carbon arc on the skin area, painted over with a weak tint of methylene blue or fuchsin.

A special little neon lamp, giving a spectrum between 580 mu. and 405 mu., placed in the mouth gives excellent results in many buccodental affections. It gives light without heat.

The "Uvag" method of Huldshinsky consists of the reduction of an application of silver nitrate by a source rich in ultraviolet rays. Originally intended for the treatment of eczema, it has been tried in the treatment of various ulcers. The deposit of metallic silver as a protector of the wound, permits rapid healing with exposure to the air. This method can be augmented in effect by the intravenous injection, at the same time, of a solution of hyposulphite of soda and pilocarpine.

Chemotherapy can ably assist the action of phototherapy. In this role, gonacrine, methylene blue, eosin pyridin and vanillin are valuable adjuncts.

The conjoint action of chemotherapy and phototherapy offers a very hopeful field.

Radiation Treatment of Vomiting in Infants

Drs. O. Barbour and J. W. Connell, of Peoria, in *Illinois M. J.*, Feb., 1930, state that, while radiating the thymus of an infant with projectile vomiting, it was observed that the child stopped vomiting 12 hours after the application of the rays.

In 21 cases of projectile vomiting of infants, in which radiation of the upper chest region

has been tried, it was relieved in all. Five were relieved permanently by one exposure to the roentgen rays; 3 were relieved permanently by one exposure to radium; 12 were relieved temporarily by exposure to the roentgen rays and then permanently by exposure to radium.

The radium dosage usually was a total of 720 milligram-hours, distributed over four areas of the chest; i.e. four 2-hour applications of 90 mg., 2½ inches from the skin, with 1 mm. lead filter plus a lead jacket. For the roentgen-ray treatment, an area over the manubrium, 1½ by 2 inches, was exposed. The time of exposure was 5 minutes; distance, 12 inches; spark gap, 6 to 7 inches; milliamperes, 5.

Hydrotherapy in Arterial Calcification

In *Lancet*, Lond., Apr. 26, 1930, Dr. V. Mladejowsky, of Prague, states that arterial calcification is influenced by hydrotherapy. The patient is well brushed, in a bath at 35° C.; then 36° C., for 10 to 20 minutes; he then receives a good douching with a fan-shaped douche from a distance of 6 to 7 feet, at first for two of three minutes with water at 35° C.; then at 25° C. for one or two minutes. These douches are repeated two or three times. The patient is dried and lies down, well wrapped, for about half an hour. If the patient reacts badly, the temperature and time must be modified to suit him, and rubbing applied until a good reaction is obtained.

The author states that, under this treatment, the subjective symptoms, including high blood pressure, disappear.

The author also found that associated drug therapy, in the form of colloidal silica, combined with an extract of *Drosera*—the common *Drosera rotundiflora*—in which all the ferments were retained, was highly efficacious in overcoming the associated subjective symptoms of arteriosclerosis. The combination is given in the form of tablets.

Measurement of Output and Standardization of Ultraviolet Lamps

In *Brit. Jour. Actinoth. & Physioth.*, June, 1930, Dr. A. Furniss shows that there are many and varied methods for checking the ultraviolet output of lamps and standardizing them. Some of the apparatus used are:

Hill's Acetone methylene blue gage.

Kellar's erythema dosimeter.

King's carbon tetrachloride actinometer.

The Levy-West dosimeter.

The Fluorescent Actinometer of the Hanovia Co.

Rentschler's uranium cell and neon tube.

The cadmium photo-electric cell.

It is extremely important to standardize each burner and to test it again after 3 months, or

sooner if the clinical results appear to be unsatisfactory. Then a record can be kept of its falling off in output, and dosage and distance regulated accordingly. Unless the lamps are standardized from time to time the results will be futile for practical or statistical purposes.

The question of dosage is the very foundation of successful ultraviolet therapy. Excessive dosage, apart altogether from whether erythema was produced or not, shows itself by a feeling of weakness, malaise, irritability, sleeplessness and loss of appetite. On the other hand, suitable dosages are followed by a definite feeling of well-being, increased vigor, and cheerfulness, capacity for work and play, appetite and energy.

Some simple and safe rules with regard to dosage can be summarized thus:

- 1.—Never commence treatment with a large dose.
- 2.—Commence with bi-weekly treatments.
- 3.—Be careful that the patient is a suitable and proper case for irradiation.
- 4.—Note particularly the type of the patient; i. e., dark or fair. Note, especially, sandy or red hair.
- 5.—Be sure of the accuracy of the lamp, as far as possible.

Low-Tension Wave Currents

The employment of diathermy and painless, physiologically timed or rhythmically interrupted slow sinusoidal currents in one and the same apparatus, has long been desired for the treatment of injuries of muscles and joints, etc.

The Committee on Standardization of Physical Therapeutic Apparatus, of the American Electro-Therapeutic Association, has devised such a machine. Its description, as given by the chairman of the committee, Dr. R. Kovacs, of New York, in *The Med. Herald, Phys. Therap. & Endocrine Survey*, July, 1930, is as follows:

This apparatus is a combination of two electrical transformers in one cabinet, as one unit. One produces a damped oscillating current of approximately 1,250,000 cycles a second, with a damping factor of about 1 percent. The second apparatus is a low-frequency, interrupted sine-wave generator. An alternating current of variable frequency: i. e., from one cycle in about twenty seconds to about one cycle a second, is produced in a rotating armature that is energized by a 60-cycle current. The secondary coil can be coupled from zero coupling (minimum current output) to a rather close coupling (maximum output). In the secondary circuit there is a synchronous rectifier. Due to the reversals of polarity and the low-frequency impulses generated in the rotating armature, and to this rectifier contact, slow-frequency, alternating current waves that change polarity are obtained; the 60-cycle interruptions are unipolar. The large waves, therefore, are of reversing polarity; hence they represent symmetrical alternating current waves. The 60-cycle interruptions are symmetrical, and consequently produce the one low-frequency wave, an interrupted direct current.

Each apparatus is individually controlled. The current produced is delivered to a filter system that prevents one apparatus from feeding into the other. This filter system makes it possible

to deliver to the patient either one current alone or both currents simultaneously from the same binding posts. There is no interference of one apparatus with the other nor any back-feeding from either apparatus. As a power supply, the apparatus requires a 60-cycle current of suitable voltage. The current is applied with metal electrodes commonly employed in high-frequency treatment work. The apparatus is marketed under the trade name Sinutherm.

It is the purpose of this apparatus, with a slow-rhythm alternating current, to cause contraction of the larger muscles, usually those that are voluntarily controlled; also it is planned to stimulate elimination of those products that have accumulated in the tissues under treatment.

The employment and careful study of the effects of the above described combined remedial agents have convinced the Committee of their undoubted therapeutic value.

Intravenous Urography

The technic of roentgenologic urography, following the intravenous injection of *Uroselectan*, is described by Dr. M. Swick, of New York, in *Am. J. Surg.*, Feb., 1930.

Uroselectan, an iodine compound, synthesized by Bina and Rath, of Berlin, is non-toxic, very soluble in water, neutral in reaction and, under normal conditions, 90 percent of it is excreted through the genitourinary tract within 8 hours. Iodism has never been observed.

Poor or good visualization of the genitourinary tract depends upon renal functional activity at the time, and non-visualization does not necessarily signify permanent renal functional disability.

This method of urography is applicable whenever ureteral catheterization is dangerous or mechanically impossible and when mechanical or infectious factors of the lower genitourinary tract prohibit instrumental interference. If the kidney functioning is poor, the results are deficient.

Apart from urography, the injection of *Uroselectan* offers a method of checking the kidney functional activity, as normally about three-fifths of the injected quantity is excreted during the first two hours.

Roentgenologic Demonstration of Pleurisy in Infants

As pointed out by Dr. E. G. Stoloff, in *Am. J. Surg.*, Mar., 1930, there are two roentgenologic shadow-casting conditions in infancy and childhood which must be eliminated as confusing factors likely to lead to an erroneous diagnosis of pleural thickening or exudation. The first is the position of the scapula, the inner margin of which may overlap the periphery of the lung, casting a linear shadow parallel to the outer boundary of the thorax. Demonstration of its continuity with the rest of the scapula will readily differentiate this shadow from a pleural thickening.

The second condition is seen in some infants, where the ribs at the sternal junction undergo rachitic widening of the epiphyses, at times so

marked that the shadows are continuous one with the other, creating an appearance of a ribbon-shaped shadow adjacent to the lateral thoracic wall, simulating pleural thickening or exudation. Close examination, however, will show evidence of rickets and the clinical history and signs will definitely eliminate pleural disease. In addition, a pleural thickening as wide as the shadow cast by a rachitic rosary, is usually denser, sharper, more smoothly defined and does not show the multiple medial convexities which outline the epiphyses.

Treatment of Hemorrhoids by Diathermy

In *Le Monde Méd.*, Paris, of May 1, 1930, Dr. H. Bordier reports conspicuous success in the treatment of protruding hemorrhoids by coagulating diathermy.

A special bipolar active diathermic applicator is used, which does not need an indifferent electrode. This is embedded deeply into the anesthetized hemorrhoid. The strength of current used for coagulation is a matter of experience and the time required for coagulating the little tumor is a few seconds only; one treatment for each hemorrhoid suffices. The patient is kept constipated for a few days.

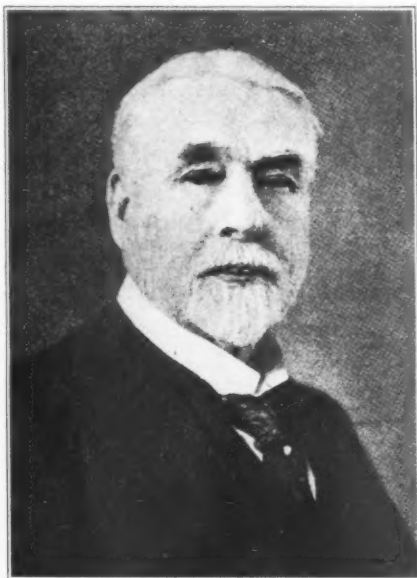
Several typical cases are described.

seems likely that this circuit, which has not yet been seen here, will supplant the present types.

The volume sets a high standard for future year books in this subject,

F. T. W.

NEWS NOTES



Passing of Dr. Snow

One of the pioneers of physical therapy has left us with the passing to his rest, in the last week of November, 1930, of Dr. William Benham Snow, of New York City, who had just completed his seventieth year and has been rather frail, physically, for some time.

For more than thirty years, Dr. Snow has been active in those branches of the healing art which are now included under physical therapy, and his precept and example have been powerful factors in the remarkable development which has taken place in these fields during the past two decades.

Medical journalism will miss him, too, as he has been, for a number of years the editor of *Physical Therapeutics* and was a member of the executive council of the American Medical Editors' and Authors' Association and a free and helpful contributor to the periodical literature.

BOOKS

Year Book for Roentgenology, 1930

Jahrbuch für Röntgenologen, 1930, Bearbeitet von, K. Brummer, Heidelberg, F. Burgheim, Berlin, H. Chantraine, Betzdorf, R. Dyroff, Erlangen, L. Grebe, Bonn, A. Hedfeld, Magdeburg, G. Hin, Köln, K. Kaestle, München, G. Kohlmann, Oldenberg, F. Peltason, Darmstadt, O. Rigler-Hufeland, Darmstadt, St. Rothman, Budapest, A. Syedlein, Elberfeld, F. Schmitz, Köln, J. Schütze, Berlin, M. Schwartz, Tübingen, W. Stock, Tübingen, O. Strauss, Berlin, W. Teschendorf, Köln, K. Weber, Köln, R. Werner, Heidelberg. Unter redaktioneller leitung von O. Rigler-Hufeland, Darmstadt, Erster jahrgang. Berlin und Leipzig: Walter de Gruyter & Co. New York: B. Westermann & Co., 13 W. 46th Street. Price, \$3.40.

This is the first appearance of a year book on roentgenology within a compass of 218 pages. The first four monographs cover a review of the physics, biology, technical aspects of roentgenology as well as accidents and their management. The next ten monographs pertain to diagnosis, followed by two on diagnosis and treatment by x-rays of eye, ear and nasal conditions. The final seven monographs cover x-ray therapy in the various specialties, as well as Curitherapy.

Among the latest ideas we note the three-phase alternating current for x-ray transformers, rectified by valve tubes, which give superior shadow pictures in very greatly reduced time, as compared with the monophase transformer. It

THE SEMINAR

CONDUCTED BY

MAX THOREK, M.D. (Surgery)

GEORGE B. LAKE, M.D. (Medicine)

[NOTE: Our readers are cordially invited to submit fully worked up problems to the *Seminar* and to take part in the discussion of any or all problems submitted.

Discussions should reach this office not later than the 1st of the month following the appearance of the problem.

Address all communications intended for this department to *The Seminar*, care CLINICAL MEDICINE AND SURGERY, North Chicago, Ill.]

ECONOMIC AND ETHICAL PROBLEMS

The response to our question regarding problems in medical ethics and economics has been gratifyingly enthusiastic, and we present the first such problem herewith, urging all readers who have clear-cut ideas on this subject to discuss it briefly and directly.

Please remember that *problems* of this sort must be stated as clearly and definitely as are problems in medicine and surgery, so that discussants may have a real target to shoot at. This is not the place for *articles* on these subjects.

We invite our readers to submit problems like this, accompanied, in all cases, by a solution which seems to the writer to be sound and reasonable.

G. B. L.

PROBLEM NO. 11 (MEDICAL)

Submitted by Dr. Hugh D. Stites,
Aledo, Ill.

(See CLIN. MED. & SURG., Nov., 1930,
p. 841)

Recapitulation: A man of 77 years, with an essentially negative family and personal history, experienced a sudden, severe pain in the right frontal and temporal regions,

associated with fever and vomiting and not relieved by medication.

After free catharsis the pain and fever subsided, but recurred after three days, accompanied by tenderness in the affected regions and complete loss of vision in both eyes within 24 hours.

The general clinical and laboratory examinations, including neurologic studies, were essentially negative. The eyes showed round, equal pupils not reacting to light; marked choked disc, bilateral; a murmur heard over the right eye with a stethoscope; loss of vision out of all proportion to ophthalmoscopic findings. X-ray examination showed sella turcica not enlarged; slight cloudiness of the right maxillary sinus.

Requirements: Suggest diagnosis and treatment.

DISCUSSION BY DR. BURTON HASELTINE,
CHICAGO

With the careful and complete record which Dr. Stites has submitted, the conclusion is inevitable that the patient is suffering from some form of *intra-cranial growth*. The history is almost typical and with his careful exclusion of other causes we have little choice but to make this diagnosis. Localization is not possible from his findings, although the pain suggests a right lateralization, probably in the frontal area.

The blindness is the type to be expected with bilateral acute papilledema and the later history is such as to confirm this.

Treatment, in a patient 77 years of age, is obviously expectant, until such time as more pressing symptoms appear.

DISCUSSION BY DR. O. B. NUGENT,
CHICAGO, ILL.

From the limited history and findings given in the brief description of the case,

the first diagnosis thought of is brain tumor. First, because far more choked discs are caused by brain tumor than by any other cause. The brain tumor symptom triad is well known to most physicians; i.e., vertigo, headaches and vomiting; and an added symptom, but not always present, is choked disc. These symptoms, of course, do not always mean brain tumor, but are indicative of increased intracranial tension, which is most often due to brain tumor.

The perimeter would be a valuable instrument for diagnosis in this case, as the study of the visual fields is necessary to establish a diagnosis in cases of choked disc due to increased intracranial pressure. The blind spot is enlarged and no other field changes are observed in the early stages of non-complicated choked disc. This is due to the marked edema immediately surrounding the disc and must not be taken as a sign of permanent change, as the latter is only noted in peripheral contraction of the field and certain central scotomas.

Tumors occur in various positions in the brain; those most frequently associated with choked disc are located in the posterior portion, commonly at the cerebello-pontine angle, a position which may interfere with the escape of the blood from the cranial cavity by pressure on the sinuses.

A tumor in this position sometimes produces loss of hearing on one or both sides, but usually only unilateral. This may come on months in advance of the triad of symptoms, depending, of course, on the rapidity of growth of the tumor.

One cannot always tell by an examination with the ophthalmoscope whether the case in question is a plerocephalic edema or an edema due to local lesion, but it should be remembered that in the former, central vision is almost always unaffected in the earlier stages, unless complicated by a local lesion, in which case central vision is always reduced. The pallor noted later in the disc is probably due to descending atrophy, and it should be remembered that the degree of pallor does not always coincide with the amount of visual loss. In the absence of the field findings, we must depend upon the three classic symptoms mentioned, for a diagnosis.

The question of treatment can briefly be classed as: (a) medicinal; and (b) surgical. The former should be directed to the processes of elimination and absorption, and the latter is usually attempted if no results are derived by the former.

Surgical treatment should be attempted as soon as there is a contraction of the peripheral field, and should consist of spinal puncture (which oftentimes reduces choked disc), decompression or direct removal of the tumor.

DISCUSSION BY DR. DIETRICH KLEMPNER,
CHICAGO

The patient presents the signs of increased intracranial pressure, which developed inside of five days. We take it for granted that he was not habitually subject to headaches and that the attack that occurred three weeks before and yielded readily to aspirin was part of the present syndrome. The present acute stage of the disease, was therefore, preceded by a more or less prolonged chronic stage.

The internist will think first of circulatory disturbances — thrombosis, hemorrhage or aneurism. The age and the sclerotic state of the aorta and the pelvic arteries, as proved by the x-rays, point that way. The choked discs might fit into this picture, but shock and loss of consciousness would probably precede them.

Uremia is ruled out by the urinary findings and the low blood pressure.

Encephalitis: Choked disc, in this condition, is rather uncommon. The whole syndrome points to a progressive increase of intracranial pressure and not to an inflammatory process.

Cerebrospinal syphilis is characterized by the multiplicity of lesions and symptoms. The base of the brain is commonly involved; ptosis and ophthalmoplegia externa are common; so are sensory abnormalities, hemiplegias and paraplegias. The clinical signs and the negative Wassermann test make syphilis improbable.

Cerebral abscess: The slight cloudiness of the maxillary sinus and the catarrhal otitis media may be considered as possible etiologic factors. It is nearly impossible to differentiate, in some cases, chronic brain abscess from cerebral tumor but the course in brain abscess is more tumultuous.

Cerebral tumor seems to be the most probable diagnosis for this case. Where is the tumor located? There are only general and no localized signs. The choked disc appeared first on the right side; that favors, slightly, the right side as the site of the tumor. The tenderness of the right frontal and temporal regions may also have a little localizing value.

What is the nature of the tumor? The

case history records a murmur over the right eyeball. There are only a few conditions that will give such a murmur. A hemangioma may produce it. The absence of vascular tumors elsewhere minimizes the chances of finding it in the cranial fossa.

The treatment is surgical. Decompression is indicated. The further steps depend on the findings.

SOLUTION BY DR. HUGH D. STITES

There was, no doubt, a chiasmal lesion and, due to the suddenness of the onset and the symptoms, I believe this to be an *aneurysm in the Circle of Willis*.

There is no specific treatment now known and the prognosis is very poor.

CLOSING DISCUSSION BY DR. GEORGE B. LAKE, CHICAGO

The symptoms in this case are clearly those of increased intracranial pressure, which is almost always due to brain tumor. The classical triad of symptoms was present (headache, vomiting and choked disc), as well as deafness, which may have been due to the same cause. The relief of the first acute attack by free catharsis is a strong corroborative finding.

It seems rather hopeless to attempt to make an accurate diagnosis of a brain tumor without a study of the visual fields, as suggested by Dr. Nugent. It is rare that a perimeter is not available within a reasonable distance, and when this occurs, the resourceful physician should be able to extemporize a reasonably effective substitute.

The absence of general neurologic symptoms rules out a number of localities for the position of the tumor. The emotional and mental changes accompanying a neoplasm in the frontal lobes, suggested by Dr. Haseltine, might easily have been overlooked. The temporal lobes are almost entirely "silent" areas. An occipital tumor can be localized only by a study of the visual fields. In involvement of the cerebello-pontine angle, the optic neuritis usually appears late (of course, we do not know how long this patient's condition has been coming on) and vertigo is commonly a prominent symptom. These tumors are rather readily accessible to radical surgical removal. Accurate localization is impossible on the data given.

As to etiology, gliomas are the commonest brain tumors in adults, while gummas are also common. Tubercle is rare after 20 years; and primary malignant tumors of the brain are decidedly rare. Cysts and

fibroid tumors occur occasionally. Repeated Wassermann tests are indicated in all brain tumors, to exclude or determine syphilis, as gummas are the only readily curable neoplasms of the brain. This was or is probably a gumma or a glioma. Aneurism of the circle of Willis is decidedly rare and ordinarily produces other signs than those given.

The first thought in cases of increased intracranial pressure is relief of the abnormal tension. This is most promptly and readily obtained by spinal puncture. If, for any reason, this operation appears to be contraindicated, similar results may be obtained by the slow (not more than 3 cc. per minute) intravenous injection of from 50 to 100 cc. of a 15- to 30-percent solution of sodium chloride or 50 to 100 cc. of a 50-percent solution of dextrose in physiologic saline solution. If the symptoms are not urgent and intravenous injection is undesirable, the hypertonic solutions may be given by mouth or by rectum (16 Gm. of sodium chloride, in 2-Gm. capsules, with 80 cc. of water, by mouth; or 200 cc. of 50-percent magnesium sulphate solution, by rectum).

In this case, I should recommend the use of hypertonic solutions intravenously, to relieve the immediate pressure symptoms, followed by a detailed study to determine the nature and location of the tumor, after which further treatment could be outlined intelligently. Patients with brain tumors rarely live more than two years.

PROBLEM NO. 1—1931 (ECONOMICS AND ETHICS)

Submitted by Dr. C. H. Kennedy,
Ft. Smith, Ark.

About two years ago a group of surgeons who had a fairly wide reputation in their part of the State and who were operating a hospital in a small town, conceived the idea of starting a hospital in a larger town, and accordingly bought a large residence, converted it into a hospital and, at the same time, formed an association for the purpose of soliciting members for what they termed a *Hospital Association*, dues in which were \$2.00 monthly, for which sum they proposed to give surgical and hospital care in all cases except those of a chronic nature.

There is a State law, which prohibits any physician from soliciting patronage in the State, so the *Hospital Association* did not include any doctors in its membership.

The Association was supposed to do the soliciting and collect the monthly dues from patrons; while the doctors running the hospital were to do the work for the Association on a percentage basis.

The Association made a house-to-house canvas for members, in the town and surrounding territory, and obtained about 2,800 families at \$2.00 per month. The initial payment to take care of the solicitor, and the monthly payments thereafter to be split between the hospital and the hospital association on a 25-75 basis, the Association receiving 25 and the hospital 75 percent of the monthly payments.

The Association grew and apparently prospered. The doctors involved were expelled from the State Medical Society, but were not one whit deterred by that: They were put out on the grounds of doing contract practice.

Last spring the charter of the Hospital Association was revoked, after a hearing in the district court, on the grounds that no one in the corporation, none being doctors, was able to perform the services they described in their application for charter—that of furnishing medical and surgical care to the sick. This suit had the effect of

stopping them from directly soliciting in a public way, but they were firmly entrenched and prospering by this time.

With a membership of 2,800 families, in a town of 30,000 people and its surrounding territory, one can well imagine what it did to the individual practices and the hospitals of the community.

There are three other good hospitals in the town (two public and one private), all standardized. One of the public hospitals is reported now to be nearly "on the rocks" financially, and the other has been hard hit also. A good many of the doctors in the community estimate their loss to the Association at about fifty percent of their families. The "Association" Hospital is still in operation, with a staff of two doctors (with two on call if needed) and possibly one registered nurse, the rest of the nursing staff consisting of girls and women such as would normally be working in restaurants and cafés, despite all the efforts of the County and State Medical Societies to the contrary.

Requirement: What would you prescribe for an affliction of this kind, especially when the public seems to favor it?

CLOTHING AND DISEASE

What relation do habits of clothing and housing have to the fact that we are becoming a race of neurasthenics; that we break down under the ordinary vicissitudes of life and apply to the cocktail for stimulation and for a sedative to the cigarette; that we catch colds so readily that it is a national weakness; that sinus troubles are common ailments; that acute infectious diseases are kept from becoming pestilences only by the artificial aid of antitoxins; that hardly anyone over fifty has an entire set of sound teeth; that high blood pressure and sudden death from heart failure are becoming matters of common experience; that feminine physiology presents so many distressing abnormalities; that childbirth is still a hazard; that rickets is more prevalent in New York City than in Havana, though New York has more hours of sunshine annually; and that dyspepsia and ulcer of the stomach are so frequently found among clothed, civilized peoples, and not among uncivilized, naked savages?

Do we see nothing significant in the fact that cancer, tuberculosis and acute respiratory diseases appear among pigmented races, which are normally immune, when they adopt the clothing and artificially-heated, unventilated houses of the white man?—DR. F. T. WOODBURY, of New York, in M. J. & Record, Sept. 17, 1930.

THE CLINIC

PSYCHOTHERAPY

Anxiety States*

By TOM A. WILLIAMS, M.B., C.M., Washington, D.C.
and Miami Beach, Fla.

*Consulting Neurologist, Gallinger Hospital, Washington, D. C., Corresponding
Member Neurological Society of Paris, etc.*

ANXIETY is a form of emotion. Emotivity is a state of feeling. This state of feeling, or reaction to a particular stimulus, may be perceived in the lower forms of animal life. Emotion, therefore, is not merely a function of higher psychic perception nor a critical process: It is a function of the whole organism.

As to what is morbid and what is not morbid in emotivity, it is not possible to draw hard and fast lines, for that degree of emotivity which may be regarded as normal at one time may, under other circumstances, be considered differently; as, for instance, in the case of soldiers who were able to conquer, by will and discipline, emotions aroused by the many terrifying situations during the war, which, at first, would have been thought intolerable by the average individual.

There are three reasons why some soldiers can learn to face such situations with equanimity, while others cannot:

In some persons there occurs an unreasonable responsiveness to mild stimuli, because of some toxic influence or physical deficiency of the neuron; in other words, the emotional perturbations are of chemical genesis.

The second type of individual seems to

have an inherent constitutional emotivity; but it is questionable whether or not the hereditary element is so important as is sometimes supposed. Upon investigation, many of these persons are found to belong to the third category.

In the third type occurs the emotivity which is induced. In my experience, this type is by far the most common. The emotional state of such an individual is not of chemical origin but is of the physiologic kind called psychogenetic. A person previously normal has met with a circumstance or series of circumstances which have aroused in him a powerful emotion, which he is unable to overcome.

INDUCED EMOTIVITY

For example, a boy of eight who suffered from hallucinations when alone (a state of emotivity which had been induced by an over-anxious mother), was alarmed whenever he was out of her sight. He needed only to be convinced that his fear that something dreadful would happen to a small boy unprotected by adults and the imaginary dangers which he fancied would exist under such circumstances were entirely without foundation.

SUPPOSED HEART DISEASE

A woman of thirty-three who, having frequent attacks of palpitation, polypnea

*Condensed from an address delivered before The Medico-Psychological Association of Great Britain and Ireland.

with chilliness, moisture and cyanosis of the extremities, rigidity and pain in the neck and back, nausea and a sensation of great weakness and dizziness, suspected she had heart disease, of which she had a great dread.

Examination showed no physical disease, the only signs present being those of hyperthyroidism. She had been an exceptionally strong girl, without worries except anxiety over the health of an invalid mother. She had always feared high places, but thought nothing of it, as the other members of her family all felt the same way. There was no fear of the dark and no social timidities, other than a dislike of being conspicuous. Having an overpowering fear of losing consciousness on account of this palpitation and heavy feeling of oppression, she had for eight years been unable to remain in a church or theatre or, unless accompanied, to cross a wide street.

When asked to relate the first occasion upon which she had experienced the trouble she was able to recall, after some effort, that in a small, ill-ventilated church, on a hot summer day, she had begun to feel an overwhelming sense of illness during the sermon. The compulsion to leave the church was intense but, as she sat near the front, she was unwilling to create a disturbance by leaving, so forced herself to remain. This attack was followed by others, which occurred more often as time went by, although at first avoidable by sitting near the door.

The diagnosis was agoraphobia and claustrophobia, hysterical in origin, arising from the powerful suggestion of the recollection of a particular experience, made efficacious now only by the timorous imagination of the patient. The hypermotivity of hyperthyroidism is occasioned by numerous circumstances, whereas, in her case, emotion was contingent only upon very definite circumstances. Hence the hyperthyroidism was considered as secondary. Relief of the chronic emotional strain was believed sufficient to cure this.

Reeducation was forthwith begun. The patient was at first unwilling to undertake it, giving the excuse that she had never been willing to introspect, but she accepted the necessity of doing so when it was explained that a person is under obligation to know himself and that it is futile to oppose this need.

It was explained to her that her dread of a close or open place was due to her ignorance of the mechanism of the consequences of a wrong way of looking at things and the consequent emotions, and that only when she obtained a true insight into her own psychologic machinery, would she be able to control it.

The power of induced ideas and the feelings produced thereby were explained to her. After a while she accepted the explanation adding, "It must have been fear, for on the first occasion on leaving the church, one of the maids said, 'What frightened you?'" She added that she was naturally a self-contained person and was relieved after the relating of her feelings.

When asked to write an account of her view of her own psychology, she did so, showing a clear grasp of the power of conceived ideas, and concluded by saying, "It is difficult for me to understand that those signs of illness are not illness at all, but are caused by an induced impression. But now, with the assurance that there is absolutely nothing wrong with my physical make up, my problem seems to be to rid my mind of the fear which has unconsciously been completely controlled by thought."

The next step in the treatment was to demonstrate the truth of this. I accompanied her to a large square and made her cross it alone. This feat accomplished, though under great stress, she declared that it had been performed better than at any time since the beginning of the trouble. Later she attended church with only momentary discomfort, when she reasoned it out and concluded that nothing could happen. I concluded with a final adjuration that, since she realized that she was well, all then depended upon herself.

Thus, violent, persistent, long-continued agoraphobia and claustrophobia were traced to a single incident upon which they were dependent. They were removed in less than a week by efforts directed toward giving the patient an understanding of their mechanism—indeed, compelling her to grasp it—and then compelling her to take an exercise which afforded a practical demonstration.

EFFORT SYNDROME

This principle I believe to be desirable in what is known as the effort syndrome. Under this term, however, have been included three different states: (1) myocardial insufficiency from infectious toxins or

over-exertion; (2) congenital neurocirculatory asthenia; (3) anxiety neurosis.

The standard treatment for all is properly regulated exercise, but the principle at work differs in each. Inadequacy from toxins is only aggravated by exercise. It is only after a period of rest that exercise benefits. Often gradual training is demanded of the myocardium. The asthenic, as would the normal, must first increase his power by proper physical exercise.

In the anxious case the principle is quite different. The progressive increase of performance merely demonstrates to the patient that he can perform the task he feared. It is merely an indirect method of suggestion. It would have been preferable to utilize psychotherapy frankly in the first place, for emphasis upon the cardiac function only reinforces the patient's erroneous belief that it is impaired.

The following is another case showing the real determinant of morbid emotivity. It is one of long-standing fear of death, which was removed in a week. The rapidity with which the genesis was discovered in this case is not singular, in fact I have found it the rule.

FEAR OF DEATH

A man was referred to me because of a "nervous breakdown." Superficially and in his own estimation, he appeared to be simply agitated, terrorized and quite incapable of conducting the business which had brought him to Washington. His face was congested, his eyes were bloodshot and he trembled violently. Indeed, the friend whom I first saw doubted his willingness to see me. In spite of this, a single interview sufficed to discover that this abject picture was not caused by physical disease, but was the result of phobias. The origin of these was ascertained, in part, at the same interview, and during a few days the genesis was penetrated adequately to permit the man to return to his Western home, no longer incommoded by the morbid fears which had incapacitated him.

This man's fears had originated during the excitement and horror caused by the bursting of a large dam in the city where he lived. His efforts to reach his home and rescue his mother were impeded by the crowd, whereby an anxious terror was induced. This persisted as a fear of water and of storms. Eventually the wind became the most conspicuous feature which aroused fear. Fire would also do this. Recently

the phobia was becoming associated with circumstances more and more numerous and he was becoming less and less fit for his business, which was of an exacting nature. He had been sent to Florida for a change, and while there improved. He quickly relapsed, however, on returning to work. The real meaning of these phobias was fear of death, and it was this that had to be dealt with before his peace of mind could be restored.

It was necessary in this case that each step he took should be expressed by him in writing before my review. It was in one of these exercises that he made the significant declaration, "Perhaps I don't amount to much anyway." He made the further statement. "I have concluded that I will be just what I make myself."

This patient was the antithesis of some we often see in that, so far from having a sense of inferiority, he felt himself to be a highly superior individual. He was an only child, spoiled, and things had always gone well with him, even in business, where he was protected and almost petted by the heads of the firm. It was not until the sense of humility was aroused that he was able to deal with the groundwork of his fears.*

PANTOPHOBIA

What is the lesson of the second case? It is not that here is a case of a state of chronic emotivity (which was pervading, more and more, the patient's whole personality, so that it was becoming difficult even to go out of the house at all, and she could not go out alone), entirely due to a particular stimulus which aroused an emotion only in a particular situation.

We were here in the process of development of what has been called *pantophobia*—a fear of everything—which this patient would have eventually developed and which is often declared to be a constitutional emotivity and, therefore, inaccessible to therapeutics. In reality, this pantophobia, when properly penetrated, was a particular individual phobia in a definite situation, the clarification of which enabled the patient to understand the psychologic processes which had eventuated in the emotivity. By a considerable effort which enabled her to grasp the new concepts, she was rid of the consequent emotivity entirely.

*See many other cases with more detailed interpretation in my book "Dreads and Bessetting Fears" (Little, Brown & Co., 1923).

In such cases (and they are the vast majority), the emotive state is purely induced. It depends primarily upon perceptual elements. The patient has perceived the situation, just as the ameba perceived a situation—a stimulus from which it recoils, because it creates in it a state of unpleasant feeling. The individual perceives a stimulus which creates a state of unpleasant feeling—an impression which she seeks to avoid. There is a teleologic reaction which she does not know how to avoid, because she does not know the nature of the stimulus. Why? Because she is not possessed of adequate knowledge to envisage that stimulus correctly, in its true relation to herself and to others.

The emotivity in such cases, must be attacked, but not directly by the soothing process of substituting another emotion for it, because that does not destroy it, but only covers it over temporarily. It must be done by attacking its primitive cause, which is cognitive. Because of the patient's failure to appreciate the true situation with which she is faced, there arises from that false view an emotion which, under the circumstances within her knowledge, is perfectly legitimate and proper. We are, therefore, dealing fundamentally, with a false belief as a pathogen, not with a primitive emotion at all. We have the best prototype in the conditional reactions of Pavlov's experiments.

It has been said that the emotion should cease as soon as its determinant has ceased. That is true, and in most cases that is what happens. The psychologic stimulus from without, which creates the emotion, disappears, and the patient is no longer in a state of emotivity. Why, in some cases, does it not disappear? It is simply a matter of failure of resolution of the problem by the patient. The patient who has lost a dear one is gradually able to become reconciled to it and to say, "Yes, we have lost this dear friend, but our life has to be lived and there are others alive who need us, so we should not always continue to mourn." The other factor, time, which means the on-

set of comparative indifference because of other interests, comes to the rescue also.

In the other case the stimulus does not actually cease; it only appears to do so. As a fact, kept to the fore by memory, the stimulus becomes more and more strong and is followed by the patient's reproduction of the emotions appropriate to the stimulus, although not to the apparent situation.

A letter a patient wrote to me very well shows that situation.

"Whenever I read anything that seems to corroborate my fear, I cannot wait for some one to help me to forget it. The trouble is that there are certain things that I have heard and read, a propos of the same idea (that of fear), that have been lingering in my mind for years to terrify me. I should have talked to you long enough when you were here for these things to rise to the surface. I left the meeting that night partly because, when I found you speaking about phobias, I was afraid that you might tell or delineate too clearly the effects of fear. Whenever I write or speak of it I want to hurry past it. I had to force myself to write out in the summary the exact words, lest thinking of it might take it worse. My will power seemed to become more and more flabby after the psychoanalysis was such a failure." (Alluding to a period of four months of treatment by a psychoanalyst, without benefit. He had persisted in searching for a repression, of which there was no evidence, to account for symptoms of which the mechanism was clear enough).

"Then the War made it evident that the worst could happen; so it is difficult for me to get adjusted right away to the thought of even trying again to get better. However, under the stimulus of your visit, I find some things much easier. Although I cannot yet voluntarily put myself in a really difficult situation, I am this much better, that I find myself considering such undertakings as a trip to a summer resort, which was hitherto fraught with too many dangers to be at all attractive, and I seem to be willing to enlarge my sphere in a way I did not consider at all a week ago."

There the patient realizes very well how stimuli might mount to sensitized receptor situations, and hence has too much fear of their import, and she knows that when she comes into contact with any matter which will touch those receptors she will pass into this panic. This patient whom I saw for two days had had these panics since sixteen years of age.

Monterey Apts., Miami Beach.

We shall slide out of this life into another, and the day of our death, like the day of our birth, shall be shrouded in forgetfulness; and if we do remember any of our trials and troubles, it will only be to smile that they have cost us a pang.—ELBERT HUBBARD.

CLINICAL NOTES AND PRACTICAL SUGGESTIONS

Progress in Superphysical Investigation*

KNOWLEDGE is always centered in one way or another. Just now the emphasis is on the scientific study of the objective side of the universe. It is, therefore, not strange that many are interested in the objective manifestations of superphysical powers. Such books as "Beyond Physics," by Sir Oliver Lodge,[†] and "Clairvoyance and Materialization," by Dr. Gustave Geley (translated by Stanley deBrath)[‡] are being rather widely read.

Lodge has thrown the whole weight of his reputation and influence into a scientific presentation of the facts of superphysical science, and declares that, fundamentally, the spirit dominates all other things. The physicists are, today, going beyond the material world, into—they know not what, as yet.

The people who are interested in superphysical matters are:

- 1.—The occultists (a very few).
- 2.—The spiritualists (men like Lodge, Conan Doyle, Etc.)
- 3.—The scientists (like Prof. Eddington).

Twenty years ago, the Encyclopedia Britannica tabooed everything of this sort; but the latest edition contains an article on spiritism by Lodge.

Prof. Compton, of the University of Chicago, has shown that the laws of physics and chemistry are not always absolutely rigid, and that mind can modify these laws, under certain circumstances. This makes a place in our scheme for providential (from *pro* and *video*; forward-looking) powers—

a place for spiritual beings, whose outlook on life is different from our own. Kant saw the reality of a spiritual nature in man, existing before birth and after death.

It is time for orthodox science to leave its coquettish attitude of ignorance of superphysical matters and look into these things critically. The work of Lodge will stand and will be enlarged, and we shall sail on new seas without prejudice and report what we find without favor.

The nearer planes of the superphysical realm can be studied from the objective standpoint. We should have professors of occult research in every university. The other professors do not know everything and have not really gone very far. Thirty years ago there was practically no research in any scientific line. Today, heavily endowed research laboratories are springing up all over the country. Presently someone will endow a laboratory for superphysical research, and then our progress in this line will be faster.

WELLER VAN HOOK, M.D.

Chicago.

Discussion

Dr. Fred D. Hollenbeck: To believe that we have reached the apex of knowledge is ridiculous. The materialistic attitude leaves us hopeless. We want to believe in continuing life, if we can find evidence of it which will satisfy us.

Dr. Meyer Solomon: This all sounds very interesting, but so far I have seen no evidence along this line that could be accepted by a scientific man. I want to be tolerant, but I cannot accept the statements

*Abstracts (by G.B.L.) of a talk and discussion before the Medical Round Table of Chicago, June 10, 1930.

[†]George H. Doran Co., New York, 1927.

[‡]George Allen and Unwin, Ltd., London, Eng.

made by Sir Oliver Lodge, Sir Conan Doyle and others. I have seen a number of patients whose mental equilibrium had, I believe, been upset by dabbling in psychism, and I feel that such studies may be dangerous.

Dr. A. R. Hollender: Dr. Van Hook has stepped off into deep water. I do not feel that he has "sold" me the superphysical idea.

Dr. F. L. Wahrer, Marshalltown, Ia.: We are, I believe, inclined to be sceptical of matters like this, because so many fakes and charlatans have been fully exposed, making us wonder if there are any sincere persons engaged in such work and doubting whether any genuine superphysical phenomena have been produced. The photographs of "ectoplasm," which Dr. Van Hook has shown us in Geley's book, look to me like bunk.

Dr. George B. Lake: In the matter of evidence, it seems a bit ridiculous to ask for physical demonstrations of superphysical activities. We must develop new perceptions and standards of value. In a world of blind men, how could one possessing vision give evidence of the redness of a sunset?

Tolerance does not imply agreement or acceptance of an idea, but it does imply familiarity with the subject before one disagrees or rejects.

There is little doubt that people have been harmed by dabbling in occult studies. "A little knowledge is dangerous." The remedy, however, is not less knowledge, but *more*. Dr. Van Hook has pleaded for genuine, unbiased, impartial study of these matters; but most so-called scientists reject the whole idea without investigating it.

Neither Dr. Van Hook nor any other student of occultism is trying to "sell" anything. Such students merely try to show interested persons a glimpse of the vast store of philosophy contained in the Ancient Wisdom. Those to whom such ideas appeal may take them freely; if they do not prove acceptable, the demonstrator suffers no loss.

There are charlatans who fleece the public in the medical profession, as in most other lines of work. There are many fakes in the field of psychism. The skeptics are those who have not taken the trouble to investigate beyond charlatanism and find the ounce of truth in the bushel of pretence.

Fifty years ago, if anyone had talked about making a photograph by means of invisible rays, he would have been hooted down. But today we make them with x-rays and ultraviolet rays. Perhaps that illustration may apply to Geley's pictures of Ectoplasm.

Dr. Van Hook, closing: Those who are not seriously interested in these matters had better let them alone entirely. It is useless and may be dangerous to dabble in them. Go into it deeply or not at all.

A century from now, it will be recognized that this very time in which we are now living was the beginning of a new era of thought.

"LET'S MAKE DIPHTHERIA A DISGRACE."

Dentistry and Medicine

DENTISTRY and Medicine in this country, it seems to me, so far as fundamentals are concerned, must come closer and closer together. After specialization begins, differences will arise. These will have to do chiefly with technical matters and procedures. I presume it is true that much restorative dental work will be done by technicians, trained in short courses, in the future. However, all this work, it seems to me, should be done under the direct supervision of trained dental physicians.

As a matter of fact, in Medicine we have a corresponding development. In diagnosis and treatment, today, much of the work is being done by trained technicians, including nurses. I refer to the examinations of urine, throat cultures, Wassermann tests, giving of salvarsan and administration of drugs by various technical methods. The medical men have this work pretty well in hand and supervise it, as a rule, fairly well. However, as medical procedures become more and more technical, the physicians will be obliged to practice medicine more and more in this way.

It seems to me that the problems in dentistry are very similar. There are many technical processes that can be done, and perhaps should be done, by trained technicians, but generally speaking, only under the supervision of highly trained dental practitioners.

If this be true, then the courses in our Universities should be adjusted accordingly.

We have been doing this in Medicine, especially in the last few years. Technicians trained in short courses are becoming more and more indispensable, and this is coming to be generally recognized. It is not always easy to determine what should be done by technicians and what by the physicians. In a general way, however, the fields are fairly well defined.

The field of odontology, it seems to me, is an especially important one, which surely will require highly specialized training over a considerable period of time. This is equally true of certain other fields of Dentistry, as well as Medicine.

We are passing through an interesting developmental stage and progress is rapid. No doubt, in the dental schools, the curriculum will lag considerably behind the progress in the scientific field. This has been true of Medicine, but we are slowly but surely, I believe, catching up.

DAVID J. DAVIS, M.D., Ph.D.
Dean, University of Illinois
College of Medicine.

Chicago, Ill.

Work of National Leprosarium During Past Fiscal Year

A REPORT recently submitted indicates that during the last fiscal year at the National Home for Lepers, maintained by the Public Health Service at Carville, Louisiana, 49 new patients were admitted. There was an average of slightly more than 300 patients in the institution during the year. It is encouraging to note that 19 patients were released, as no longer a menace to the public health. Six (6) additional patients complied with the requirements for parole (a total of 25 arrested cases), but owing to their deformities and disfigurements, which could not be cured, these patients elected to remain in the hospital, rather than be subjected to the hardships and humiliations which are frequently the portion of many paroled lepers.

The nativity of the various patients of the leprosarium indicates that Louisiana and Florida had the largest number of any of the States; there were 10 patients who were born in Ohio. Of the patients admitted during the year, California leads with 15; Louisiana follows next with 11; Texas with 6; and Florida with 5.

Chaulmoogra oil, by mouth, was used as routine treatment in 137 patients, the

dosage ranging from 9 to 375 drops daily. One hundred and eighty (180) patients are taking hypodermic injections of a special derivative of chaulmoogra oil. Dental work has continued, as necessary. Supplementary treatment, by means of physical therapy and special light treatments, is also given.

U. S. PUBLIC HEALTH SERVICE
Washington, D. C.

"LET'S MAKE DIPHTHERIA A DISGRACE."

Oxygen and Carbon Dioxide in Pneumonia

From experience in the treatment of 150 pneumonia patients, a number of whom were considered to be in a hopeless condition, the conclusion seems fully justified that inhalations of a mixture of 93 percent oxygen and 7 percent carbon dioxide, materially alleviate the condition of the patient and reduce the death rate, so that further study of the method is warranted.

The most striking results have been obtained where the treatment was begun early in the disease and continued until resolution was complete, followed by occasional treatments, at increasing intervals, until all rales disappeared.

There seem to be no contraindications to this form of treatment, except where the pneumonia is preceded by a chronic pulmonary lesion.

This combination of gases has also been found very useful in atelectasis of the newborn.

J. J. WITTMER, M.D.
New York, N. Y.

Illustrated Case Records

THERE is a certain pride felt by most hospitals in compiling reliable, accurate case records, consisting of a narrative description of the disease and a supplementary pictorial history, which includes a visual presentation of the cause and treatment involved.

Included in the photographic exhibit of the satisfactory case record might be the clinical photograph of the patient, reduced copies of the radiographs, a photograph of the tumor removed at operation, and photomicrograph of the tissue structure of the gross specimen. In cases of cardiac dis-

ease, an electrocardiogram would be essential.

Surgical procedures which cannot very well be described narratively may be photographed at the time of the operation to form a definite record, invaluable for teaching and research purposes. Photographs of rare skin diseases, intra-abdominal tumors, external glandular malformations, postures, and a host of other pathologic conditions provide invaluable data.

It is a pleasure for the consultant physician to find a visual as well as a written record of the progress of a disease. When the record is supplemented by evidence of other cases akin to the one at hand, the diagnosis becomes more simple.

The value of clinical photographic evidence in medico-legal actions is as great as that of an indemnity insurance policy, protecting the hospital or physician in malpractice suits.—*Radiography and Clinical Photography*, Aug., 1930.

Post-Encephalitic Conditions

AMONG the mental and psychic phenomena which frequently occur after encephalitis are the following:

- 1.—Behavior disorders:
 - A.—Irritableness
 - B.—Laziness
 - C.—Suspiciousness
 - D.—Lack of concentration
 - E.—Tendency to annoy and torture weaker individuals
 - F.—Untruthfulness
 - G.—Disturbances of temperament
 - H.—Absence of any regret for unsatisfactory behavior
 - I.—Kleptomania
- 2.—Personality, Changes of:
 - A.—Limited emotional responses
 - B.—Emotional instability
 - C.—Insufficient mental energy
 - D.—Dull, complaining monotony
 - E.—Ambition at low ebb
 - F.—Catalepsy

Among the neurologic conditions which may be found, the following are probably the most frequent:

- 1.—Parkinsonian (paralysis agitans) syndrome
- 2.—Chorea-athetoid movements, bodily contortions, paroxysmal "stretchings" and various myoclonic twitchings.
- 3.—Salivation

- 4.—Spastic paralyses
- 5.—Epilepsy
- 6.—Respiratory disturbances and cyanosis
 - A.—Disorders of rate of respiration
 - B.—Disorders of respiratory rhythm
 - C.—Respiratory tics
 - D.—Any combination of these three
- 7.—Sleep disturbances
- 8.—Hiccup
- 9.—Trophic disturbances
- 10.—Vasomotor disturbances
- 11.—Temperature disturbances
- 12.—Areas of anesthesia
- 13.—"Shooting pains"
- 14.—Any admixture of these.

CHAS. R. RAYBURN, A.B., M.D.

Norman, Okla.

"LET'S MAKE DIPHTHERIA A DISGRACE."

A Medico-Pharmaceutical Problem

On page 780 of the October, 1930, CLIN. MED. AND SURG., you present a problem for solution.

The prescription as written is the same as Lotio Nigra of the N. F., the correct method of compounding which is as follows:

The calomel should first be rubbed up with a little distilled water. Then the liq. calcis (lime water) is gradually added, with trituration, thus ensuring a finely divided precipitate, which should not be filtered out. The prescription should be dispensed with a "Shake Well" label.

If the doctor wishes to protect the identity of his patient, he should call up the pharmacy and dictate the prescription over the phone. It would then be compounded correctly by the registered pharmacist, who would have it delivered to the physician's office, where the patient could call for it. In this case the pharmacist would receive his regular fee of \$1.00 instead of receiving only the cost of the ingredients; and the doctor would receive only his consulting fee, instead of two fees.

J. EISEN, Ph. G.

Newark, N. J.

The mixture is a modification of the English Lotio Hydrargyri Nigra, and the same as the Lotio Nigra of the National Formulary. Calomel added to a solution of calcium hydroxide makes a black oxide

of mercury, which promptly falls out of solution, the remainder consisting of calcium chloride and water.

The directions for compounding this preparation are as follows:

Triturate the calomel with the water and gradually add the lime water, with trituration. Shake before dispensing and before using and *do not filter*.

As to the question "What's wrong here?" it is obvious that, legally, neither the doctor nor the apprentice had a right even to try to compound the prescription. It should, in justice to the patient, who certainly has some rights in the matter, be left for the regular pharmacist to put up. The patient was paying for something that he had a right to expect was to be beneficial to him; instead he received a solution of calcium chloride in water, which would be useless, applied locally. The potent part of the mixture—the black oxide of mercury—had been removed by the filtration.

But, at that, he was lucky. Suppose it had been a prescription calling for a preparation for internal use!

R. B. GRAY, M.D.

Bay Shore, N. Y.

In reply to the query "What's wrong here?" allow me to submit my opinion from the point of view of a pharmacist. I shall begin by asking a pertinent question myself. Since when have men who have but recently completed an internship become "specialists?"

To get back to your question, I feel constrained to say that about everything is wrong, except the diagnosis and the prescription itself.

The ethical physician is expected to keep the confidence of the patient. The same is true of the ethical pharmacist. What reason has an ethical pharmacist to divulge the name of a patient to any one, or the disease from which he may be suffering? Since when has the embryo physician been given an intensive course in the compounding of prescriptions? It is the duty of the physician to diagnose and prescribe. The pharmacist superintends the compounding; and an ethical pharmacist does not diagnose nor prescribe.

If the pharmacist has erred in leaving an assistant in charge, a certain amount of laxity may also be laid at the door of the physician who does his own dispensing

and collects the additional profit, which he is taking from the pocket of the pharmacist. If these latter could only get what they are entitled to, it would be unnecessary to transform an apothecary shop into a lunch parlor, candy store, toy shop, or jewelry store, to say nothing of books, magazines, newspapers, etc. Is the doctor to be made a present of the legitimate earnings of the pharmacist?

To get to the compounding of the prescription; an apprentice *may* know how to compound it. This one apparently did not; and the doctor knew about as much—or as little. Any qualified prescriptionist knows that:

1.—A six-ounce bottle cannot hold 200 cc. of anything.

2.—Mercurous chloride, plus lime water, gives a black precipitate of mercurous oxide, which is the active ingredient. Why filter it out?

3.—If in doubt about the compounding of a prescription, he can refer to reference books for a hint—in this case, the *Lotio Nigra* of the N. F.

In concluding, let me state that there are many properly qualified men who would prefer to open genuine pharmacies where such cases would be unheard of, but the majority of physicians, for some reason or other, think such stores could not exist. Why can't they cooperate?

JACOB M. SIEGEL, Ph.G.

New York City.

An Approved Solution*

COMMENTS on the Medico-Pharmaceutical episode are these:

1.—It requires years of hard grind under the tutelage of masters, to develop a 'specialist'; a recent graduate lacks this training.

2.—Only licensed pharmacists should compound prescriptions.

3.—Inaccurate apothecary substitutes replaced the metric quantities ordered.

4.—The doctor, druggist and patient would have profited by using "*Lotio Nigra* N. F."

5.—The black precipitate, this intentional incompatibility, was the active medicament and the bottle must be shaken before using.

6.—Fee splitting between doctor and druggist is a reprehensible practice.

*From *Bul. Chicago Med. Soc.*

The Care of Baby Teeth

DECAYED teeth that always hold quantities of decayed food materials, swollen, red gums, stained teeth, uncleaned mouths, all afford excellent breeding places for germs and many of the diseases of childhood are contracted because of such conditions. Nearly every contagious disease—all of the so-called children's diseases—gain their entrance to the body either through the mouth or nasal cavity. If the child's mouth is healthy, if his teeth are sound, and his gums firm and hard, many of these disease-causing organisms cannot find lodgment.

It is often asked, When should a child first be taken to the dentist? By all means he should be taken by the time he is three years of age, and at least every six months thereafter. The temporary teeth should be cleansed by the dentist at least twice a year, and all cavities should be filled just as soon as they appear. This is not painful unless the cavities are allowed to become large. All stains should be removed, because underneath these stains are plaques of germs which destroy the enamel. The fillings may be either of amalgam, or what is probably preferable, of copper cement, which is plastic and easily inserted. In case a tooth is lost prematurely, through accident or disease, the space should be retained by a simple appliance to hold the adjacent teeth apart.

This is an age of prevention—an era that emphasizes the importance of taking every means to prevent disease before it occurs. The early visits to the dentist when, possibly, nothing is to be done but cleaning and giving advice as to the use of the tooth brush or a small filling or two, will have a salutary effect upon the child. He will look upon the dentist as

his friend, instead of some one to fear, and he will soon learn to take pride in the appearance of his mouth and teeth. The dentist will make every effort to preserve those teeth and keep them comfortable and useful. Think what it will mean to this child when he grows up to have a beautiful, clean, and regular set of teeth!

Although the child does not lose all of his temporary teeth until he is about twelve years of age, the first permanent molar usually appears about the age of six years. The child does not lose any of his temporary teeth when this tooth erupts; but, instead, it appears just back of the last temporary molar. This is frequently confusing to mothers, because they have not noticed its arrival and often think it is a temporary tooth. This first permanent molar, or six-year molar, is the most vital tooth in the mouth—the key-stone of the arch, as it is sometimes called. Many times it is not perfectly formed and decays quickly. This is a serious loss and always leaves the child's face deformed. Just as soon as this tooth appears, the family dentist should be consulted.

During all the time these temporary teeth are erupting, are in use, and are being lost, the permanent teeth are being formed. The permanent teeth are built of the same elements of which the temporary teeth are formed, and the only way these necessary elements can be taken into the body is in the proper food. Bone and tooth building elements—calcium, phosphorus, and magnesium—are contained in most leafy vegetables, milk, butter, eggs, whole-wheat bread, coarse cereals, and fruit; but sunshine, open air play, fresh air at night, and clean personal habits are all also essential to good health.

U. S. PUBLIC HEALTH SERVICE,
Washington, D. C.

THE SUCCESSFUL CONSULTANT

A successful consultant is one who benefits the patient and establishes a closer degree of friendship with respect to himself and the physician in charge. This requires tact, reserve, good judgment, correct diagnosis and a carefully announced expression of affairs at the opportune time and psychologic moment. It is indeed a gift which few of us are capable of rendering.—DR. E. J. JASPER, in Northwest Med., Apr., 1930.

THE LEISURE HOUR

Adult Infantilism

GIVEN the task of explaining the phrase "adult infantilism," I would begin with a broad generalization. Cases of inadequate mentality, in adults, may be divided into two classes: First, those due to a defect in the individual himself, making it impossible for him to attain normal mental stature under any circumstances. This includes a wide variety, ranging from the simple dullard to the hopeless moron, but to none of these do we apply the term adult infantilism. By this term we designate the second class; namely, those in whom lack of stimulus, direction or proper environment has prevented the full development of an otherwise normal capacity. This class may be said to include us all, "excepting me and thee," for few, indeed, are those whose capacities might not conceivably have been developed more completely.

But for practical purposes we limit the term to those individuals whose mental growth has slowed up somewhere in the pre-adult stage, and to those in whom certain normal childish traits have persisted through the period of adolescence. Even with these limitations, the class is large, especially in America, because of certain obvious defects in our educational system. We force our young mentalities too urgently toward certain goals, with the goal as the sole objective, and with that attained they are left with no inclination and often with a distaste for continuation of any similar intellectual effort.

When the study of literature is made an almost punitive task, undertaken only for the purpose of answering enough pedantic questions to obtain a passing mark, a certain distortion is produced in youthful minds which, to some extent, robs them of a source of pleasure throughout life. When the study of history becomes a tedious memory exercise to make a "grade" the

child is apt to turn from the fascinating story of human progress and develop a taste for trashy fiction. Similar illustrations could be cited in other fields of study.

In the case of a boy, occupational necessity usually compels a continued development along one line, with the result that he often becomes a master in one field and remains an adolescent in all others. Hence the infantile pronouncements so often given out on many topics by men who, in their proper sphere, can speak with unquestioned authority. The girl more often lacks the occupational necessity, and her undirected and sometimes unrecognized efforts to find mental occupation have produced one of the problems of the age.

Every experienced physician knows the burden of the once-admirable woman who, from lack of wholesome and consecutive intellectual activity, has become a habitual symptom-hunter and a nuisance to herself and her associates. Often she develops a "mission" to elucidate the occult, and her childish fancy is prone to be captivated by some exotic creature whose dress is peculiar, whose hair is long and whose skin is any color but white.

Time was when some of us cherished the hope that the growing interest of women in public affairs would bring about the domination of a better element. We overlooked the fact that, in such stern business, something more than high ideals and good impulses is essential. Trained capacity is needed here, as elsewhere, and the "help" of incompetent women only adds to the muddle made by incompetent men. It is, indeed, a question whether the mere doubling of the number of enfranchised persons without qualifications has not left us more helpless than before. As a general rule, in social movements, with increase of mass there is a gain in force and a loss in intel-

ligence. This is a good explanation of our miscalculation, but poor consolation for our disappointment. Certainly, recent American history is disconcerting to the worshipper of "Pure Democracy" and universal suffrage.

As an instance of the carrying over of childish traits into adult life, we may cite that of the play instinct. This is a normal and, in early childhood, a predominant impulse. To some degree it should persist throughout life and its relative place, as to other traits and impulses, is one of the distinctions between infantilism and maturity. If play is almost the sole occupation of a child, he is normal; if this is true of the adult, he is a waster and a social excrescence. If a child plays that he is Napoleon or Captain Kidd, he is healthy; if the adult does so, he is a moron. A child likes to "dress up," wear feathers and follow a band—an impulse often persisting into adult life, producing the harmless "joiner" or, in some cases, something less innocuous.

By whatever name we call it, this curious stoppage of the process of mental growth is a real and very prevalent thing, especially in America. It is not to be confused with the crass stupidity of the peasant class in older countries. There the growth has never begun; while in this country the mass population is started upon the road to literacy without sufficient orientation or impulsion to produce real education. Nowhere else are there such hordes of people able to buy and to read printed matter, and with only infantile judgment as to the value of the stuff they read. This has produced an unprecedented field for exploitation, which engages the attention of a wide variety of exploiters, ranging from the harmless and enterprising "go-getter" to the charlatan of the lowest type. Only the infantilism of adult America could make possible the adulation accorded to some whose names are prominent in the public prints.

BURTON HASELTINE.

Chicago, Ill.

While psittacosis is causing alarm, the worst disease that parrots have caught from human beings is logorrhea.—*Springfield Republican*.



Courtesy, Victor News.

Evolution

Ambition of 1870—A gig and a gal.

Ambition of 1920—A flivver and a flapper.

Ambition of 1950—A plane and a jane.

—*Bul. Chicago M. S.*

Punishment A La Mode

Seaman: "Remember the lazy village bully who, when he felt tired, would order the timid soul to punch himself in the nose?"

Sailor: "That's nothing. I read of a mother today who, when her little boy wouldn't be good, lifted her head from her couch and said: 'Willie, go to the vibrator and give yourself a good shaking.'"—*Army and Navy Journal*.

A Clinical Epitome

An ignorant man from Bombay
Thought chances just melted away;
And now he has tabes
And gummatous babies
And thinks he's the Queen of the May.

"My father weighed only four pounds when he was born."

"Great heavens, did he live?"

—*Exchange*.

Thumbnail Therapeutics

Dextrose in Pneumonia

In the treatment of pneumonia by dextrose, the most practical method is to dissolve 200 Gm. of dextrose in 100 cc. of water, to which is added the juice of 2 or 3 lemons. A liter contains 800 calories. It is very palatable and the patient should drink from 2 to 3 liters each 24 hours, commencing from the earliest stage of the disease.

When it is impossible to give the dextrose lemonade by mouth, a 25-percent solution of dextrose is given (200 cc.) slowly, intravenously, 4 to 6 times each 24 hours.

—Dr W. G. MACLACHLAN and associates, in *Am. J. Med. Sc.*, Jan., 1930.

Laryngeal Spasm

Children are prone to attacks of laryngeal spasm and these nearly all occur at night. The child should be placed in a hot bath and stimulated by slapping the chest. In the variety due to acute laryngitis, an emetic dose of ipecac will relieve the spasm.

—Dr. S. BERNSTEIN, in *Practitioner*, Lond., Oct. 1930.

Ketogenic Diet in Epilepsy

Observation of a series of cases of epilepsy in the Chicago State Hospital, treated by a ketogenic diet, shows that, although it is not a cure, yet in it we have a method of influencing the convulsions without using depressive drugs.—Dr. A. M. SAUNDERS, of Chicago, in *Illinois Med. Jour.*, Nov., 1929.

Pharyngeal Cough

For pharyngeal cough, following acute infections, a simple prescription of codeine is often all that is needed. For a child four years old, the following prescription allays the frequent coughing, satisfies the parent's desire for medicine and does no harm.

R. Codeine Sulph. gr. i (0.065)

Syr. Aurant. oz. iii (90.000)

M. Sig. One teaspoonful every three hours.

—Dr. GERARD N. KROST, in *Bul. Chicago M. S.*, Sept. 20, 1930.

The Common Cold

When a coryza is due to a cold, damp atmosphere, weak solutions of cocaine, epinephrin, ephedrine, or of mild astringents may be applied to the nose. Calcium salts or atropine sulphate may be given internally.

Calcidin tablets, internally, may be used when a cold is brought on by hot and dry atmosphere.—Dr. D. W. HAMRICK in *New Orleans Med. & Surg. J.*, July, 1930.

Acute Otitis Media

In the treatment of acute otitis media, the following points should be stressed: An early paracentesis tympani; avoidance of secondary infections; searching for and treating early the causes for persistent otorrhea; the value of early antral drainage, if we are to avoid one of the commonest causes of permanent deafness, namely, chronic suppurative otitis media.—Dr. F. HOLT DIGGLE, in *Practitioner*, Lond., Jan., 1930.

The Cinchophens and Salicylates in Treatment of Arthritis

The comparative study of 27 arthritic cases, treated with moniodocinchophen, cinchophen and sodium salicylate, shows moniodocinchophen to be the most effective.

The marked relief from pain, reduction of swelling and restoration of motion, together with the systemic changes observed, is apparently due to the presence of

iodine in the cinchophen molecule.—Dr. P. G. POTENCIANO, of Eloise, Mich., in *M. J. & Record*, Feb. 19, 1930.

Oils in Small Doses

In prescribing cod-liver oil, or any oil in fact, most physicians find it advisable to begin with small doses. This is the usual procedure with all patients, whether young or old.

For the first few days, five or ten drops might be given three times a day. Then gradually increase the amount until the desired dose is reached. In this way the patient quickly becomes accustomed to taking it and the objection which some people have to taking any oil is readily overcome.—*Patchwork*.

Barbital

"We have called the attention of our readers in previous numbers of the *Journal* to the value of barbital, administered an hour before local anesthesia, and we note that in some of the very largest clinics where local anesthesia is employed generally, the practice is to administer barbital in 10-grain doses for the adult, an hour before starting the local anesthetic.—Editorial note in *J. Indiana S. M. A.*, Feb., 1930.

Acriflavine in Gonorrhea

In trypaflavine (acriflavine) we possess an excellent adjunct in the treatment of gonorrhea, which permits us to diminish the concentration of the fluid employed locally, down to the complete absence of any irritation. Its great value consists in its ability to limit the disease to the anterior urethra.—Dr. K. SKUTEZKY, Innsbruck, Austria, in *Urol. & Cutan. Rev.*, Mar., 1930.

Quinine Hydrobromide

Quinine hydrobromide is as efficient as the sulphate, for all purposes, and it has the distinct advantage of producing few or none of the symptoms of cinchonism.—Dr. JOHN A. GIBBONS, Mitchell, Ind.

Removing Impacted Teeth

Following the removal of an impacted tooth, the patient should be instructed not to wash or rinse the mouth for at least 12 hours. The less the wound is disturbed the less bleeding there will be and the quicker and better will be the recovery. Even with a diminished flow of saliva, such wounds heal more rapidly; while it seems that, in cases of aptyalism, the results are even more favorable.—H. BEAR, D. D. S., Richmond, Va., in *Southern Med. & Surgery*, Dec., 1929.

Infections of the Hand

Lymphatic infections of the hand should be treated conservatively and operated upon only when there are unequivocal signs of pus formation. Infections of the anterior closed spaces of the distal phalanx of the tendon sheaths and facial spaces of the palm, should be drained carefully and adequately as soon as the diagnosis is made.—Dr. S. L. KOCH, of Chicago, in *J. Indiana S. M. Assn.*, Dec., 1929.

Insulin in Vulvar Pruritus

A case of intractable vulvar pruritus in an elderly woman was cured by small injections of insulin. Although this case had been of several years' duration and had resisted all kinds of local treatments, the author considers the effect of the insulin injection as marvelous, relief having been obtained within a few hours of the first injection of 2 cc.; the pruritus disappeared following the use of 200 units of insulin.—Dr. J. E. PESSANO, in *La Semana Méd.*, Buenos Aires, Feb. 13, 1930.

Bismuth in Interstitial Keratitis

Usually, after 3 to 5 injections of bismuth, the severity of the symptoms of interstitial keratitis is definitely mitigated, but it may require from three months to a year of treatment before the cornea becomes clear. Patients with vision reduced to finger-counting have been restored to completely normal sight by this method.—DRS. C. S. WRIGHT and H. H. PERLMAN, in *A. J. of Syph.*, Apr., 1930.

Current Medical Literature

Etiology of the Common Cold

As the results of experimental investigations in regard to etiology of common colds by Drs. G. S. Shibley, A. R. Dochez and Katherine C. Mills, of New York, these authors reach the following conclusions as given in *J.A.M.A.*, Nov. 22, 1930.

The contagious cold in human beings is caused by an invisible, uncultivable, filtrable agent, which, in all likelihood, belongs to the group of so-called submicroscopic viruses. Colds can be transmitted successfully from man to the chimpanzee and from man to man by means of Berkefeld filtrates of nasal washings obtained from individuals suffering from spontaneous colds, more especially during the period of rising incidence of infection in the community. These experimental colds resemble in all respects colds spontaneously contracted in the natural environment.

In apes, one of the significant effects of infection with the filtrable agent is the stimulation into greatly increased activity of any potential pathogen that may happen to be present in the upper respiratory flora. This we regard as of great importance, since it seems to explain the marked secondary activity in the respiratory tract of such organisms as pneumococci, streptococcus hemolyticus and Pfeiffer's bacillus, which lead to the severe sequelae which sometimes follow the common cold and influenza. In fact, the most important significance of viruses of this type seems to lie in their capacity to incite activity on the part of the more dangerous pathogenic organisms that infest the upper respiratory tract.

New Problems of the Orthopedic Surgeon

In *J.A.M.A.*, Nov. 15, 1930, Dr. C. B. Francisco, of Kansas City, remarks that, owing to the general establishment of community hospitals, the tendency is to take crippled children to them instead of to special orthopedic centers. This change necessitates that medical students and interns will need to be taught more of the principles of orthopedics. The medical profession must meet this problem; there is nothing about the correction of deformities that is any different in principle from surgical work in general, and students can be taught to care for them as they are taught to care for ordinary ailments; the unusual case can be specially dealt with.

Another phase of orthopedics that demands special study is that of industrial medicine. Compensation laws and insurance organizations are assuming control, with a tendency to direct this work. They are demanding shorter hospitalization, a quicker return to duty and earlier ad-

justment of claims. The orthopedic men are the ones to whom they have turned for advice, and the orthopedic men must labor to meet the views of these organizations, while at the same time not departing from medical ethics and preserving medical control. Patients will be best served by the fair and just rating of all cases.

Vitamin A in Disease

Reviewing recent experimental work, especially that of Green and Mellanby, regarding vitamin A as an anti-infective and growth-promoting agent, an editorial in *J.A.M.A.*, Sept. 13, 1930, remarks that the value of vitamin A as an anti-infective agent can be judged only after it has been used extensively. Recently viosterol has come into vogue in the treatment and prevention of rickets. Because of its high vitamin D content it should be more valuable than cod-liver oil, but in certain cases, cod-liver oil has seemed to be more curative than viosterol. The large amount of vitamin A present in cod-liver oil may be the reason.

Laryngitis Sicca

As stated by Dr. L. G. Richards, of Boston, in *J.A.M.A.*, Sept. 13, 1930, this form of laryngitis, characterized by the presence on the vocal cords, rarely on other parts of the larynx, of a gray, dry, crusting accumulation, presents problems quite apart from any form of acute obstruction.

The condition tends to develop as a complication of a nasopharyngeal infection, usually with the pneumococcus as the bacteriologic factor. The child is first suspected of having an attack of croup, and there is a stridor quite suggestive of this diagnosis. It is, however, far more persistent and is accompanied by fever of varying degree. Dyspnea tends to increase and it soon becomes evident that some form of obstruction is present which requires investigation. It is in just this sort of situation that direct laryngoscopy has proved its value.

Inspection of the larynx reveals the typical dry, grayish crusts, attached to the edges of the vocal cords. It is not a membrane in the same sense as the diphtheritic membrane, since it does not bleed on removal and has no intimate attachment to the underlying tissues. Rather is it the accumulation of dried secretions, in much the same way as they occur in the pharynx in a severe case of atrophic pharyngitis. The obstruction produced is essentially mechanical and it is by mechanical removal with proper forceps, through the laryngoscope, that these accumulations can best be handled. Removal,

just as in the diphtheritic cases, gives immediate temporary relief. The problem is to prevent the recurrence of the crusts and, still more, to prevent their extension downward into the trachea.

Once the extension begins to take place, much the same type of pathologic change occurs as is found in the so-called arachitic bronchitis following aspiration of certain vegetable substances. Such extension, with its accompanying infection, toxemia and marked limitation of available lung tissue, presents a grave and often fatal prognosis.

If mechanical removal of the obstructing crusts proves in any way inadequate for satisfactory respiratory exchange, the insertion of the intubation tube is distinctly indicated and, particularly in this form of laryngitis, is to be preferred to tracheotomy.

Mental Factors in Bodily Disease

A vast amount of evidence has accumulated to show that mental conflicts and emotional disturbances upset the normal physiologic functions of the vegetative or sympathetic system. This system, as is known, regulates secretion, circulation, digestion and respiration; if it is disturbed, functional disability takes place in the viscera associated with these functions, such as kidneys, heart and stomach. When this functional upset persists it may become organic.

In *J.A.M.A.*, Oct. 11, 1930, Dr. C. C. Wholey, of Pittsburgh, reports 3 cases of this kind, representing extreme instances of the extent to which apparent surgical and medical syndromes—gall-bladder colic, occipital headache with dizziness and nausea—may mask the real disease, where mental factors become converted into bodily expression. One of these patients, whose real pathologic condition was an emotional major hysteria, remained bedridden on account of digestive disturbances for twenty years.

Less pronounced conditions of invalidism and organic disturbance are frequently brought about wholly, or are exaggerated, by mental or emotional maladjustments.

Evaluation of mental factors necessitates study of the emotional life of the individual, knowledge of the family setting and, at times, a readjustment of environment and domestic relations.

The Newer Bacteriology

Many changes in our conceptions of bacteriology occurred within recent years; they are discussed by Dr. T. B. Rice, of Indianapolis, in *J. Indiana St. M. A.*, Sept., 1930.

Dr. Rice points out the fallacy of the older ideas of the immutability of bacteria. It is now known that many bacterial species may be made to change the typical form, by which they have been well known, to another which is quite different. There are what are called "smooth" forms which are virulent and resistant to phagocytosis and "rough" forms which are non-virulent and susceptible to phagocytosis.

It is known that a considerable number of different species of bacteria have filtrate forms which, although not detectable by staining, still possess the infecting principle.

Furthermore instead of asexual propagation, bacteria propagate sexually and it is possible that Mendel's law of inheritance may apply to them.

D'Herelle's bacteriophage, Besredka's antiviruses and the value of immune serums and vaccines are discussed by the author, in connection with the newer knowledge of the biology of bacteria. The many expedients by which bacteria may be forced to change from the "smooth" to the "rough" type are also discussed and these or some of them are shown to be the basis of many clinical therapeutic processes the reason for which was not clearly understood. One of these, for instance, is the healing of osteomyelitic lesions by forcing the active germs to stew in their own metabolic products, instead of keeping the region surgically "clean."

The author suggests that, if it is true that bacteria comply with the Mendelian laws of inheritance, it may be possible to breed strains of bacteria of low toxicity and high antigenic powers. This is already seemingly realized in Calmette's BCG vaccines for tuberculosis, and from another angle in the use of gonococcic and other antiviruses.

Although much of the newer knowledge regarding bacteria may be impracticable, therapeutically, at the present moment, it gives great room for speculative thinking.

Results of Tonsillectomy

A comparative study of 2,200 tonsillectomized children, with an equal number of controls, three and ten years after operation, as given by Dr. A. D. Kaiser, of Rochester, N. Y., in *J.A.M.A.*, Sept. 20, 1930, has led him to these conclusions:

- 1.—The real value of the removal of tonsils and adenoids cannot be definitely established in a few years. Apparent benefits during the first few postoperative years are not so evident over a ten-year period.
- 2.—Outstanding benefits are apparent in influencing the incidence of sore throats over a ten-year period.
- 3.—Substantial benefits are apparent in rendering children less susceptible to scarlet fever and diphtheria.
- 4.—Acute head colds and otitis media, though definitely lessened over a three-year period, are not essentially influenced over a ten-year follow-up period.
- 5.—Cervical adenitis is decidedly reduced in tonsillectomized children over a ten-year period.
- 6.—The respiratory infections, such as laryngitis, bronchitis and pneumonia, not only are not benefited, but actually occur more frequently in tonsillectomized children.
- 7.—First attacks of rheumatic manifestations occur from 30 to 50 percent less often in tonsillectomized children. The greatest reduction occurs in children tonsillectomized early. Recurrent attacks are not benefited at all.
- 8.—Incomplete tonsillectomies do not offer the same protection against usual throat complaints and infections as complete removal of tonsils.
- 9.—The hazards of tonsillectomy must be considered in evaluating the end-results. Considering this hazard, the late results seen in 2,200

children ten years after operation are evident only in the reduction of sore throat, cervical adenitis, otitis media, scarlet fever, diphtheria and rheumatic fever and heart disease.

Therapeutic Nerve-Block With Procaine and Alcohol

Alcohol injection of peripheral nerves was first introduced for the relief of trigeminal neuralgia.

In *Am. J. Surg.*, Aug., 1930, Dr. P. D. Woodbridge, of Boston, reviews the literature to show that this procedure of therapeutic nerve-blocking—the injected substances being a varying mixture of alcohol and procaine—has been successfully applied in various conditions throughout the body, in which intense pain was the chief symptom. Paravertebral and other peripheric nerve injections have been employed in carcinoma of the face and neck, to relieve dysphagia in tuberculosis laryngitis, in angina pectoris, in disease of the lungs and pleura, in gall-bladder and renal disease, in gastric crises, etc.

The amount and strength of the injection varies with the conditions. In carcinoma of the neck, the author blocked the right cervical plexus, using 4 cc. of 2-percent solution of procaine hydrochloride, injected at the tip of the transverse process of each of the second, third and fourth cervical vertebrae, followed by 4 cc. of 80-percent alcohol. The third branch of the fifth nerve was blocked by 2 cc. of the procaine solution and 3 cc. of the alcohol.

The author suggests that this method of therapeutic nerve block may possibly be extended to such diseases as claudication, erythromelalgia and Raynaud's disease.

State Medicine

The following is extracted from an article by Dr. M. A. Austin, of Anderson, Ind., in *J. Indiana S. M. Assoc.*, June 15, 1930.

Whatever we do we can rest assured that many of us are going to see state medicine an actuality. The entering wedge for this is the politicians' bid for the soldier vote. Already we have free medical, surgical and hospital care for all ex-service men and women, irrespective of their disability, and a recent survey of the government hospitals showed that forty-five percent of the patients in these hospitals are now being treated for conditions that have no connection with their service during the war.

On Tuesday evening, February 25, 1930, in Anderson, the American Legion held a big meeting and was addressed by Congressman Albert W. Vestal, Representative of the Eighth District of Indiana. His bid for the soldier vote was not only to see that the present free hospitalization of soldiers be continued, but that, with the building of the new hospitals as planned, this free hospital care will be extended to the wife and children of the ex-service man and to all his dependents, which includes, of course, his father and mother, brothers and sisters, foster-father and foster-mother, grandparents, uncles and aunts, and perhaps cousins. In addition to this Mr. Vestal stated that he would sponsor a bill

to pay the families an allowance, whenever a soldier is confined in a government hospital, irrespective of the cause of his hospitalization.

I have just had a man tell me he could not pay his bill because his step-daughter's husband had a serious case of scarlet fever and rheumatism which had disabled him for several months, and the step-daughter, her husband, and two children were being supported by my patient. Under Mr. Vestal's new law, and my patient being an ex-soldier, his step-son-in-law is now his dependent and could be hospitalized in a government hospital. And if the allowance for families is put over and my patient should become ill, then he could draw an allowance for the maintenance of his wife, two step-sons, his step-daughter and her husband and their two children, as well as his own parents, and a mother-in-law.

The Dermatubin Test for Tuberculosis

Dermatubin is a semiliquid mixture of killed tubercle bacilli in a concentrated glycerin tuberculin filtrate.

The test is made as follows: The skin over the manubrium sterni is cleansed with alcohol. Then a drop of the dermatubin, the size of a pin's head, is taken on a glass rod, applied to the skin and rubbed in for about one minute. When the reaction is positive, definite elevated papules appear on the skin over the area treated.

In *Illinois M. J.*, July, 1930, Drs. B. Goldberg and B. Gasul, of the Chicago Municipal Tuberculosis Sanitarium, reporting upon 109 cases in which the von Pirquet, Moro, Mantoux and Dermatubin tests were made, found that the relative sensitivity of the reagents was in the following order: Dermatubin, Mantoux, Pirquet, Moro.

The Dermatubin test is easy of application and it is superior to the commonly performed v. Pirquet test, in which interpretation is more difficult.

Pupillary Reactions of Pregnant and Nonpregnant Women

As reported by Dr. Z. Bercovitz, of New York, in *Am. J. Obst. & Gynec.*, June 1930, in 72 nonpregnant, normally menstruating women it was noted that there was no pupillary reaction as a result of instilling the patient's own serum into her conjunctival sac.

In 26 nonpregnant women who had not menstruated, for any reason whatever, only 2 gave positive pupillary reactions to their own serum.

Of 68 pregnant women it was found that, in 80 percent, there was a change in the size of the pupil following serum instillation. This change was either a dilatation, a contraction or, in a few cases, only a marked activity of the pupil.

The pupillary reactions to instillation of adrenalin hydrochloride were studied in 54 preg-

nant women. It was found that 75.9 percent reacted positively; but of 98 nonpregnant women only 2 cases reacted positively.

The reactions may be applied as a simple confirmatory test in the diagnosis of questionable pregnancy. They do not offer an absolute means of differential diagnosis between pregnancy and other uterine conditions.

Curing the Ulcer Patient

Regarding the treatment of peptic ulcer patients, Dr. Seale Harris, of Birmingham, Ala., in *Ann. Intern. Med.*, Aug., 1930, remarks that we do not get very far in curing ulcers by feeding the patient devitaminized diets, and we may expect recurrence if, after the patient has had a medical "cure" or a gastro-enterostomy or resection of the ulcer, he is allowed to go back to the same unbalanced, deficient vitamin diet he was eating when he developed the ulcer.

Other points in the treatment of ulcer patients which the author stresses are: avoidance of overwork and worry, abstinence from tobacco, elimination of toxins and the necessity for annual or semiannual physical examinations. The patient treated medically or surgically for ulcer and "cured" must, thereafter, necessarily live a strictly hygienic life if he would avoid recurrence.

Diagnosis of Congenital Syphilis

In *M. J. & Record*, July 16, 1930, Dr. F. Herb, of Chicago, calls attention to the great prevalence of congenital syphilis, unsuspected during life but proved at autopsy. Warthin showed that 40 percent of all patients who died during a period of ten years at the University Hospital, Ann Arbor, Mich., were syphilitic.

The blood test, in cases of congenital syphilis, is not dependable. Herb calls attention to a triad of symptoms, in the presence of all of which, as experience has shown, the diagnosis of syphilis is as dependable as in the case of a 4-plus Wassermann reaction. These three signs are: Palpable cervical glands, scaphoid scapula (abnormal development of the scapula on its vertebral margin, either unilateral or bilateral), and findings in the lower, posterior aspects of the right lung that indicate a consolidation of the underlying tissues, with or without a history of lung troubles. Syphilis usually involves the lower parts of the lungs, in contrast to tuberculosis which usually attacks the apices first.

Treatment of Arterial Hypertension by Bismuth Subnitrate

A study of the effects of bismuth subnitrate treatment of 200 cases of arterial hypertension has been made by Dr. E. J. Stieglitz, of Chicago, as reported in *J. A. M. A.*, Sept. 20, 1930.

The course of events following the oral administration of bismuth subnitrate may be briefly outlined as follows: In the bowel, the bismuth subnitrate is slowly decomposed, liberating nitrate ions. The nitrate is reduced by *Bacillus coli* to nitrous acid. Thus minute

quantities of nitrite ions are continuously absorbed, as the low solubility of the original salt maintains a persistent repository. The process is equivalent to the oral administration of minute doses of glyceryl trinitrate at ten or fifteen minute intervals throughout the day and night.

During and following the administration of 10 grains (0.65 Gm.) of bismuth subnitrate thrice daily, small amounts of nitrite ions are detectable in the urine. Gradual, gentle, persistent vascular relaxation of the arterial tension occurs.

In the 200 consecutive, unselected cases of arterial tension in this series, the average improvement for the whole series was 60 percent for the systolic and 83 percent for the diastolic hypertension; seventy-seven (77) percent of the patients responded with a fall in the diastolic tension to 100 mm. or below. The average duration of observation in these cases was 6.3 months; but in some cases observation was continued to 48 months. The best results are obtained by the very gradual reduction in the dosage of the drug, so that medication is not completely withdrawn before three or four months.

The Spleen and the Parathyroids

An editorial in the *J.A.M.A.*, Sept. 27, 1930, points out that recent experimental work has shown that the removal of the spleen in dogs was followed by a decrease in the blood calcium content. It has also been shown that, in the absence of the parathyroids, the spleen, by its role in calcium metabolism, can take over their function of preventing tetany. These intricate relationships between organ systems illustrate the ends to which the organism as a whole will go, in order to preserve the vital equilibrium.

Intradermal Injections of Gonococcal Filtrate

In *J. Urol.* Sept., 1930, Drs. B. C. Corbus and V. J. O'Connor report that, after prolonged experimental work, they have produced a bouillon filtrate of the gonococcus, corresponding to Besredka's filtrate of staphylococcal and streptococcal antiviruses. The authors' gonococcal filtrate does not, however, correspond exactly with Besredka's definition of an antiviral, but has properties entirely foreign to it. The former is toxic and antigenic, the latter is atoxic and nonantigenic. Thus, as their filtrate is more than an antiviral, the authors designate it as gonococcal bouillon filtrate.

Clinical tests with the gonococcal bouillon filtrate were made in 8 women with gonorrheal endocervicitis, in 3 girls with vulvovaginitis of specific origin, and in 37 men with gonorrhea. In the case of the female patients, the results are very encouraging; 9 of the males are apparently cured after no other type of treatment. The filtrate is used by intradermal injection.

That intradermal injection of gonococcal bouillon filtrate, properly controlled, is followed in most instances by the development of a specific immunization of some degree seems probable

from the authors' observations; in 80 percent of the individuals so treated the complement fixation test for gonorrhea has been positive even after the third or fourth injection of 1cc.

Treatment of Epidemic Encephalitis

In the United States there is a constant widening of the incidence of epidemic encephalitis. In *Arch. Neurol. & Psychiat.*, Sept., 1930, Dr. H. A. Riley, of New York, remarks that until the cause is known the hands of therapeutists will be tied.

In recent cases or those exhibiting recrudescence, one absolutely invariable line of therapy should be rigidly insisted on; namely, complete and utter rest, both physical and mental.

In addition, there are three measures, two physical and one medicinal, which have appeared frequently to modify favorably the ordinary course of the malady. These are: (1) the institution of a dehydrating process, the best and most satisfactory of which is the use of daily injections of 250 cc. of a 25-percent solution of dextrose, U. S. P. intravenously; less satisfactory results can be obtained from enemas of magnesium sulphate, given in a 50-percent solution, by rectum, every day or every other day; (2) repeated, thorough spinal fluid drainage, as long as the spinal fluid level remains above from 50 to 60 mm. of fluid pressure; (3) the use of the salicylates, given preferably by the rectal route, in maximum dosage. By this method as much as 100 or 200 grains (6.5 or 13 Gm.) of sodium salicylate may be given with apparently beneficial results.

Liver Therapy in Subacute Combined Degeneration of the Cord

In the liver treatment of pernicious anemia, the beneficial effects on the anemia itself are marked and well known. On the other hand, the beneficial effects of liver therapy on the nervous manifestations so commonly present in this disease are certainly less striking.

In *Canad. M. A. J.*, Aug., 1930, Drs. R. F. Farquharson and D. Graham state that, of 50 cases of pernicious anemia given liver treatment at the Toronto General Hospital and followed up, well marked symptoms and signs of subacute combined degeneration of the cord were noted in 18. These cases were treated with liver; 10 were markedly improved, 4 definitely and 2 slightly improved. From these results there seems to be little doubt that adequate liver therapy has a specific effect on the nervous lesions, arresting their progress in virtually all cases. However, recovery after definite nervous disturbances have developed is almost always incomplete. These findings are in general agreement with those reported by Minot and Murphy and other clinical investigators.

The authors have found the following an inexpensive, palatable and effective means of supplying the adequate liver broth:

Five hundred (500) grams of liver are finely ground in a meat chopper, care being taken to

save all the juice. Two glasses of water are added, and it is transferred to a fruit jar, shaken for a moment and allowed to stand for eight to twenty-four hours, if possible in an ice chest. Finally it is heated to the boiling point, and after cooling sufficiently it is strained through cheese cloth. By twisting round and round, as much fluid is expressed as possible and the total amount of fluid obtained is given to the patient every day. It may be taken cold or hot, and various flavouring agents—onions, soup powders, tomatoes—may be added if desired.

Many patients take this broth willingly, who cannot take whole liver or commercial liver extract.

Ethyl Chloride

In *Canad. M. A. J.*, Aug., 1930, Drs. V. E. Henderson and A. S. Kennedy state that, as a result of personal experiments, study of the literature and the histories of reported fatal accidents in ethyl chloride anesthesia, they believe that the best method of administering this agent is the open one.

A mask covered with 6 to 8 layers of gauze should be held about one inch clear of the face, and the ethyl chloride dropped up on it at the rate of 20 to 30 drops per minute, the number of drops depending on their size and the patient. Ethyl chloride should never be sprayed on a closely-applied mask. The mask is lowered slowly, reaching the face in one and a half to two minutes. Within three minutes, often less, respiration becomes deep and regular. The eye signs are not characteristic of deep anesthesia as the pupils are not very small and the eyeball rolling. Minor operations can now be performed, or the mask changed and ether begun.

A mask soaked with ethyl chloride should not be used for ether, as the different volatility and boiling points of the two liquids make it impossible to foretell what anesthetic mixture the patient may receive. If the patient be carried with ethyl chloride till the eye signs are those of third stage anesthesia—cessation of rolling and a small pupil—there seems to be grave danger of an overdose.

The authors further believe that spasm is less marked when the anesthetic is given slowly, but if it becomes marked a change should be made to ether at once.

Identification of New Born Infants

At the Boston Lying-In Hospital, as reported by Dr. F. C. Irving, in *Am. J. Obst. and Gynec.*, July, 1930, the method of identification of new born infants is by the use of the army aluminum identification discs. As the discs come from the manufacturers, they have two holes punched in them and are stamped in pairs with serial numbers, the surname of the mother is cut into the surface with a die and each fitted with a string of waxed fishline, having a perforated shot for fastening.

When the baby is born, one of the discs is fixed around its neck and the correspondingly numbered disc to the mother's wrist, in such way that they cannot easily slip or be removed.

Should more than one mother of the same surname be in the hospital at the same time, the serial numbers take care of this. When the infant is brought to the breast, the mother can always assure herself that she has her own child by comparing the discs. The discs are indestructible and the names cannot be erased. This method is simple, efficacious and inexpensive.

Pregnancy and Parkinsonism

There is a certain amount of literature in support of the view that pregnant women are particularly susceptible to acute encephalitis and a consequent parkinsonism.

From their experience of a personal case and a review of the literature, Drs. P. B. Bland and L. Goldstein, of Philadelphia, in *J.A.M.A.*, Aug. 16, 1930, report the effects of encephalitis, both acute and chronic, in connection with the occurrence and development of pregnancy. They find:

1.—Women suffering from chronic, epidemic encephalitis are not rendered sterile thereby.

2.—The incidence of abortion, in the patients who conceive, is about the same as in the non-parkinsonian individual.

3.—Pregnant women are not especially susceptible to acute encephalitic infection.

4.—Clinically, the disease pursues about the same course in the pregnant as it does in the nonpregnant woman, though the mortality rate is somewhat increased.

5.—Pregnancy may aggravate latent or quiescent symptoms of encephalitis, in patients who have been previous victims of the disease.

6.—Women becoming infected with acute encephalitis during pregnancy are especially prone to develop parkinsonism as a sequel, the incidence being from 75 to 80 percent. In the nonpregnant woman the incidence does not exceed 25 per cent.

7.—Chronic encephalitis does not influence pregnancy, with its culmination in labor, adversely, save in a small percentage of cases.

8.—Accumulated evidence tends to show that pregnancy has a decidedly unfavorable effect on parkinsonism.

9.—While it is possible for encephalitis to be imparted to the unborn child, transmission of the disease to the fetus seems to be exceedingly rare.

Treatment of Secondary Anemia

From their clinical experience in a large series of cases, observed in the Mayo clinic, Drs. H. Z. Giffen and C. H. Watkins summarize, in *J.A.M.A.*, Aug. 23, 1930, their views on the subject of secondary anemia.

No diagnosis may be more difficult or more interesting than that of the cause of chronic secondary anemia. Elimination of organic disease may require extended study. Especial emphasis should be placed on examination of the stools for occult blood, and abdominal exploration may be advisable, if loss of blood is accompanied by even mild abdominal symptoms. The more obscure cases may be classified from both the clinical and the morphologic points of

view. Knowledge concerning treatment will, in this way, be developed on a sounder basis.

The results of experimentation on animals, clinical investigation and clinical trial indicate that, in the cryptogenetic, chronic hemorrhagic, and chronic infectious types of anemia, and in those due to dietary deficiency, first place should be given to a balanced diet, rich in vitamins and hemoglobin-building substances, such as whole adult liver, whole fetal liver, kidney, red meats, apricots, peaches and prunes, together with large doses of iron—90 grains (6 Gm.) a day of ferric citrate, equivalent to 1 Gm. of metallic iron.

There is apparently, at present, no good reason for the use of arsenic, splenic extract, bone marrow, copper, or intravenous and intramuscular medication. Clinical trial has indicated that time is an important element, because hemoglobin-building factors must be produced before hemoglobin itself can be formed.

The effect of whole adult liver, whole fetal liver, and especially the various fractions of liver, singly and in combination with iron, copper and other metals, must be investigated in the various types of anemia seen in man. Nutritional studies, particularly as related to food imbalance and food deficiencies, must be expanded and applied clinically. It is possible that certain types of secondary anemia may be benefited by the liver extract of Cohn and Minot, when it is used in conjunction with other substances. A thorough clinical test should be made of the fractions described by Whipple and Robschiet-Robbins, and their co-workers. Especially should all clinical trials of these various substances be made singly, then in combination, and with cases satisfactorily controlled.

The problem is the determination of the kind of treatment that is suited to each particular type of secondary anemia.

Psychic Impotence

Dr. Joseph Welfeld in his article on "Psychic Impotence in the Male," in *Illinois M. J.*, Aug., 1930, sets forth three causes of this condition: (1) local; (2) functional; (3) psychic.

Local causes may be congenital absence of the testes, congenital failure of development or an acquired condition, such as induration of the penis or traumatism.

Under the nervous type of functional impotence, Dr. Welfeld brings out that the endocrines—thyroid, pituitary or any other glandular deficiency—may have a direct bearing on functional impotence.

Pathologic functional impotence occurs when any kind of disease weakens sexual power; and very often chronic disease causes impotence.

Biologic impotence is of very little importance, including only two causes: senile impotence and biologic impotence due to lack of cooperation on the part of the conjugal partner—the so-called female frigidity.

The author finds that "psychic impotence" is not real impotence. The difficulty is absolutely mental. Imagination is so strong that a patient may actually suffer the symptoms of disease which does not exist.

Psychic impotence in males is very prevalent.

Most cases seen by urologists are of this type.

In impotence due to anatomic malformations, nothing can be accomplished by treatment; in functional impotence, tonics, physical therapy (hydro- and electro-therapy and ultraviolet rays) may be used with discretion; in psychic impotence, the important thing is to remove the patient's fears and morbid anxiety by psychotherapy.

The author cites a number of case reports to illustrate these various conditions.

The Causes of Hypertension

From their own experimental studies and a review of the findings of others, Drs. E. T. Bell and A. H. Pedersen, of Minneapolis, reach the following conclusions, as given in *Ann. Intern. Med.*, Sept., 1930, regarding the factors that influence blood pressure.

Hypertension has been produced experimentally in animals by pressor substances, increased intracranial pressure, removal of the depressor nerves, urinary obstruction, roentgen-ray atrophy of the kidneys, and stenosis of the renal vein.

Secondary hypertension of acute type occurs in man from physical exertion, sensory stimuli, increased intracranial pressure and adrenal tumors.

Secondary hypertension of acute or chronic type occurs with glomerulonephritis, nephrosis of eclampsia, bichloride nephrosis, polycystic kidneys, urinary obstruction, advanced amyloid disease, and degeneration of small renal arteries and arterioles.

Secondary hypertension of chronic type is seldom seen except in association with renal disease.

Obstruction in the renal circulation or obstruction of the outflow of urine seems to cause hypertension, probably through a reflex mechanism. Renal insufficiency alone does not cause a rise in blood pressure.

Acute fulminating hypertension is probably a primary renal disease.

Primary hypertension has its basis in inheritance. The defect inherited is an inferior vascular system, which either reacts excessively to ordinary environmental stimuli or degenerates from inherent weakness.

Cancer Institutes

It is obvious that, in every little town in the United States, a combination of intellectual training and the necessary facilities for expert diagnosis and treatment are not available.

The French, with their Latin clarity of mind, have realized fully that mere public propaganda is not useful unless the profession meets the results of such propaganda. They have established throughout France a series of hospitals of from 50 to 100 beds. These institutes are in university towns, where the men who serve can be university professors, with all the specialties represented. The place is a teaching institution devoted, not only to the cure or alleviation of the cancer patient, but also to the instruction of the physicians of the neighborhood.

The only practical way out of the cancer situation that I can see is for the medical profession to urge the establishment of cancer institutes in connection with the medical schools of the state and, when any or all are erected, to see that as many as possible of those suffering from cancer be referred to these institutions for treatment. These centers should be prepared to offer such diagnosis and treatment as represents the best skill of the country. All results, whether good or bad, should be published.—Dr. F. Carter Wood, New York, in *Ohio St. M. J.*, July, 1930.

Static Disorders of the Foot

From a study of over 400 individuals (about half being clinical cases) in the New Haven Hospital (Yale University), Dr. D. J. Morton reports, in *A. J. of Surg.*, Aug., 1930, that three structural characters have been identified which can be diagnosed by the x-rays and which specifically exert a vicious influence upon the mechanism of the foot. These are:

1.—Laxity of the joint between the inner cuneiform bones and between them and the navicular bone.

2.—Shortness of the first metatarsal bone.

3.—Posteriorly located sesamoid bones below the head of the first metatarsal.

These three characters are named in the order of their estimated frequency and importance. They are found in a wide range of variation, from slight to conspicuous. Occasionally they occur as a single factor, but usually two or all three of them, presenting different degrees of fault, are found in combination.

Diagnosis and Treatment of Pylonephritis

Pylonephritis is one of the commonest genito-urinary diseases and practitioners should be familiar with its differential diagnosis and treatment. In *J. Urol.*, Aug. 1930, Dr. C. P. Mathé, of San Francisco, reviews 369 cases, treated in St. Mary's Hospital during the past 13 years, 347 of which were followed and the results of the treatment noted.

Pylonephritis is often confused with influenza, abdominal lesions such as appendicitis, salpingitis, gall-bladder disease, gastrointestinal lesions, and with acute and chronic nephritis. The distinguishing feature in its differentiation lies in a careful urine analysis. In making this, one should not rely on the urine culture in order to ascertain the true nature of infection, as the colon bacillus will often overgrow and outshadow the staphylococcus, streptococcus and other organisms. The colon bacillus was recovered in 64 cases in which the stained smear had previously shown cocci alone or a mixed infection of cocci and bacilli.

Early catheterization and drainage in acute pyelitis is advised in all cases in which acute hydronephrosis is suspected of being due to obstruction caused by congestion resulting from inflammatory processes in the ureter and pelvis.

The modern treatment of chronic pyelonephritis consists of systematic eradication of all possible foci of infection; the elimination of stasis in the upper and lower urinary tract; routine drainage and lavage, alternating silver nitrate with the penetrating dyes; and the employment of local immunization by the injection of the filtrate directly into the renal pelvis.

Of the 347 cases studied and observed, 45 were absolutely unimproved. Thirty of these presented stasis, either in the upper or lower urinary tract, which was an unquestionable factor in lowering the resistance of the kidney and making it more susceptible to infection. One hundred and fifteen (115) showed only slight improvement, which consisted of more or less transitory amelioration of symptoms, but in which, however, the urine remained infected. Because of progressive destruction of the kidney, nephrectomy was resorted to in 15 cases for the following reasons: pyonephrosis, 8 cases; advanced pyelonephritis with recurrent stone formation, 3 cases; persistent hemorrhagic pyelonephritis, 2 cases, and pyelonephritis with atrophy and obliteration of the ureter 2 cases.

The "Radical" in Obstetrics

Experience of 4,025 labor cases in the Department of Obstetrics, McGill University, Montreal, leads Dr. Jas. W. Duncan, to the following conclusions, as given in *Am. J. Obst. & Gynec.*, Aug., 1930.

- 1.—Episiotomy is one of the best procedures of the moderate school.
- 2.—Elective low forceps is a very close second.
- 3.—The pelvic floor and perineum are, in the vast majority of cases, conserved by the combination of these two.
- 4.—Emergent or prophylactic low forceps is the best way out of a bad hole.
- 5.—Breech extraction, under modern improved technic, need not become the cause of so much fetal loss as in the past.
- 6.—The occipitoposterior position still demands our deepest respect, but does not compel the same old fear.
- 7.—Cesarean section is not 100 percent safe for the child, because we really know nothing of the intrauterine fetus.
- 8.—It is not consistent with good judgment to interfere with the normal healthy woman, unembarrassed by complications of pelvis or position, who, if left to herself, will in 71 percent of cases, deliver herself without maternal or infantile injury.
- 9.—Conversely, it savors almost of the insane to introduce, as agents for the relief of pain, fatigue and a much exaggerated amount of tissue damage, operative procedures responsible for 80 percent of the fetal mortality.
- 10.—The "radical" of obstetrics, in our humble opinion, is to be found at either end of the chain, in the conservative and abolitionist camp.
- 11.—For the former we believe there is hope. Surgery seems to be the only treatment for the latter.

Minimizing Perineal Lacerations

The following method of minimizing perineal lacerations during labor is given by Dr. Jos. S. Diasio, of New York City, in *Med. Times*, Aug., 1930.

"In every labor case, I have taken advantage of the 'side delivery,' standing on the right side of the patient who is sterily draped and in proper position for childbirth.

"As soon as the vertex distends the vulva, the palm of the right gloved hand, which is covered with a sterile towel, is applied directly to the perineum, making firm pressure, while the thumb, index and middle fingers of the other hand, by means of a piece of sterile gauze, exert forcible pressure against the vertex during each pain. Thus, the perineum is allowed to dilate slowly without tearing, by means of the right hand, which, serving as a splint, is placed on the perineum. During the pain, the perineum, which is normally three inches in thickness, thins out so that the muscles and rectum are pressed posteriorly, and eventually there is nothing but skin remaining.

"In the interval between pains, the head is permitted to recede, but an effort is made to maintain the head always fixed, in order that the suboccipito-bregmatic diameter, which is the smallest diameter of the head, may pass through the vulva at birth, instead of the occipito-frontal diameter. This procedure is repeated with every pain until the head is so far born that the vulva is distended by the parietal bosses, as well as by the descent of the head on the perineum. At this time, a finger of the right hand is passed behind the rectum to seize the chin from without. With occiput engaged under the symphysis pubis and the mentum held by the right hand, the head is delivered in the succeeding periods between pains."

The percentages of lacerations of the perineum, observed in 537 labors in which this maneuver was employed, were 27 percent in primiparae and 11 percent in multiparae—figures much below the usual.

Allergic Migraine

Based on a study of 55 cases of migraine, in American patients ranging from 6 to 68 years of age, Drs. R. M. Balyeat and Fannie L. Brittain, of Oklahoma City, in *Am. J. Med. Sc.*, Aug., 1930, conclude that this disease is interchangeable in the linkage with asthma and hay-fever, which is good evidence that these syndromes have a common etiology, namely, a specific sensitization. A family history of allergy was elicited in 85.4 percent of the cases.

The exciting factor in migraine is probably always a specific sensitivity to one or more foreign proteins. Treatment should consist of thorough elimination of the foods and dusts to which the patient is found specifically sensitive, and results are as good or better than those obtained in nearly any other chronic disease.

NEW BOOKS

Alvarez: Nervous Indigestion

NERVOUS INDIGESTION. By Walter C. Alvarez, M.D., Associate Professor of Medicine, University of Minnesota (The Mayo Foundation). New York: Paul B. Hoeber, Inc. 1930, Price \$3.75.

Many medical books are intended solely or chiefly for specialists in various lines; others are particularly valuable to students; still others are helpful to general practitioners. Once in several years a book is published, having such a wide appeal and embodying such keen observation and sound medical sense that one feels it should be read and studied by all physicians. This is such a book.

The title is much more limited than the field of the material which is found between the covers, for in Chapter II will be found a brief, but surprisingly adequate, discussion of the differential diagnosis of all types of indigestion, both organic and functional.

The first chapter contains a fascinating introduction to psychology as it applies to medicine, and an outline of the effects of disordered emotions upon the physiologic functions.

The hints on history taking in Chap. II, will, if sincerely followed out, make a better doctor of any student; and they apply, not merely to gastric disorders, but to any type of anamnesis.

Chapter IV contains all that the average general practitioner needs to know about psychotherapy and is, again, applicable in a wide variety of conditions, if the basic principles laid down are apprehended.

The fifth chapter deals with the treatment of the type of disorders mentioned in the title, and is written with unusual clarity and directness, the few drugs recommended being specified, by name, without camouflage. Suggestions as to diet, rest, etc. are also sufficiently specific to preclude misunderstanding.

The sixth chapter contains practically all that most physicians need to know about the physiology and nerve supply of the digestive tract, and embodies the most modern ideas, some of which many readers will find revolutionary.

Chapter VII, "Suggestions for Further Reading," is not a mere bibliography (that comes at the end), but contains pertinent and intriguing quotations from a number of the older authors.

One rarely sees a book which comes so near to being a vade mecum for the physician. Here are anatomy, physiology, psychology, together with basic principles of the art of medical practice and choice bits of medical history, all welded into one coordinated piece of writing by a man who obviously possesses wide scholarship, an unusual command of words and the technic of putting them together to express thoughts with

unerring precision and engaging humor and sprightliness. Moreover, he has the very rare frankness to say he does not know, when that is the case.

This is not merely an immensely helpful technical monograph; it is also a delightful piece of literature (pleasingly put together, mechanically, as well), which would be inadequately characterized by saying that it is as fascinating as a novel.

The physician who fails to add this volume to his library and study it will deprive himself of much professional assistance and will miss several hours of keen and refreshing mental exercise which, God knows, most of us badly need.

Bassler: Intestinal Toxemia

INTESTINAL TOXEMIA (AUTOINTOXICATION); Biologically Considered. By Anthony Bassler, M.D., F.A.C.P., Consulting Gastro-enterologist, St. Vincent's, Peoples' and Jewish Memorial Hospitals, New York City; St. John's Hospital, Yonkers; Christ Hospital, Jersey City, etc. Illustrated with Sixteen Text Cuts. Philadelphia: F. A. Davis Company, 1930. Price \$6.00.

Dr. Bassler's book on intestinal toxemia (what is commonly termed autointoxication) is based on his 30 years clinical study and experience of it and on the observation of 5,000 cases of chronic intestinal toxemia.

The sweeping criticism of fad treatments, such as colon irrigation, yeast eating and mineral oil lubrication of the intestinal tract, is justified, as none are based on any true scientific consideration of the basis of the trouble.

Dr. Bassler concentrates upon biologic investigation and diagnosis; that is to say, obtaining by any or several test methods a knowledge of the predominating microorganisms of the intestinal tract. There are 181 different organisms known to inhabit the intestines, and of these 72 are definitely pathogenic. When the prevailing organisms are determined, Dr. Bassler treats the chronic toxemia arising from the microbial products by subcutaneous injections of bacterial vaccines, or ectoantigens, to provide antibodies, or by special-type diets, based on general classifications of intestinal toxemias. The charts which accompany the volume, as a supplement, represent an immense amount of painstaking work.

Dr. Bassler's discussion of the whole subject should impress the profession with the logical position of the biologic method of viewing chronic intestinal toxemia as a whole, and of dealing with it in the only logical and scientific way deduced from the acceptance of the condition as the result of localized bacterial activity. His views that the condition is emi-

nently one to be met by the internist and not by the surgeon, that it calls for patient investigation of the individual and that it can be remedied when, and only when, the real underlying agents are discovered, will have great weight with the profession.

Although in the reviewer's opinion there is some matter in this book which might have been omitted without detracting from its value, yet it is a pleasure to point to a work which opens up an old subject in a new light and which, like Bouchard's work on the same subject, published nearly 40 years ago, may mark an epoch in the profession's general ideas regarding the important subject dealt with.

Tidy: Synopsis of Medicine

A SYNOPSIS OF MEDICINE. By Henry Letheby Tidy, M.A., M.D., B.Ch., (Oxon.), F.R.C.P. (Lond.), Physician to St. Thomas's Hospital; Consulting Physician to the Royal Northern Hospital; formerly Assistant Clinical Pathologist and Medical Registrar to the London Hospital. Fifth Edition, Revised and Enlarged. New York: William Wood and Company. 1930. Price \$6.00.

This is a really valuable synopsis of medicine—concise in descriptions but apparently very complete, both as regards the inclusion of all pertinent subjects and in giving the information that is essentially necessary on each subject.

The work is divided into two parts, each part dealing with a specific class of diseases, systemic or regional. The text covering each disease is arranged under distinctive headings, symptoms, treatment, etc., so that the user can at once put his finger on what is desired.

For the busy practitioner who wishes to refresh his memory, this will be found an excellent ready reference volume to be kept on the office desk; for the student it may be regarded as a generously filled quiz compend. The treatments and other matters are selected by the author as those which are sanctioned by the consensus of opinion and debatable data are omitted.

This fifth edition has been thoroughly revised and brought down to date as regards advancement in medical knowledge.

Kugelmass: Feeding in Infancy and Childhood

CLINICAL NUTRITION AND FEEDING IN INFANCY AND CHILDHOOD. By I. Newton Kugelmass, M.D., Ph.D., Sc.D., Associate Attending Pediatrician, Fifth Avenue Hospital; Riverside Hospital; Pediatrician, Hospital for Ruptured and Crippled; Director, Heckscher Institute for Child Health. 37 Illustrations. Philadelphia: J. B. Lippincott Company. 1930. Price \$6.00.

A great part of the practice of pediatrics is concerned with specific nutritional therapy. Within the past few decades much of the empiric knowledge upon which this therapy was formerly based has been replaced by precise scientific facts, deduced from controlled experimental investigations and verified by clinical applications.

The purpose of Dr. Kugelmass in this book is to supply the general practitioner with this

newer and scientific information applied to the etiology, diagnosis and treatment of the problems of pediatrics involving nutrition. It covers the period of life from infancy to pubescence, dealing with nutrition as it affects the cause and prevention of disease and the maintenance of growth and proper development.

The aspects of present-day pediatric practice are covered in ten chapters, each divided into a number of necessary sub-chapters. Special and specific dietary tables for the various conditions dealt with form a conspicuous feature of the work; and a feature that will be welcomed is the presentation of tables of food values for the important food constituents—grains, sugars, vegetables, etc.—showing, in different colors, the percentage composition, ash, vitamins, etc., in these foods.

The pediatrician or general practitioner who conscientiously studies the clinical and experimental facts presented here ought to be able to apply accurately scientific data in dealing with any nutritional disorders which he may be called upon to deal with.

Barger: Organic Chemistry in Medicine

SOME APPLICATIONS OF ORGANIC CHEMISTRY TO BIOLOGY AND MEDICINE. (The George Fisher Baker Non-Resident Lectureship in Chemistry at Cornell University). By George Barger, Edinburgh University, New York: McGraw-Hill Company, Inc., 370 Seventh Avenue. 1930. Price \$2.50.

This book represents a series of lectures presented by the author, the outstanding British biochemist, at Cornell University, in 1928. The chapters of the book relate to International Relations in Science, The Chemistry of the Hormones, The Chemistry of the Vitamins, Chemical Constitution and Physiologic Action, Chemotherapy, and Blue Adsorption Compounds of Iodine.

Each of the chapters is elegantly and interestingly written, and covers the subject matter well, as is to be expected of a man who has contributed as much to scientific advances as has Barger.

The book is of value, not only for general informative reading, but also for reference by the physician, the chemist, or the biochemist, where accurate information is desired regarding the occurrence, preparation, chemical and clinical properties and uses of the various products discussed.

E. H. V.

Fielding: Birth Control

PARENTHOOD: DESIGN OR ACCIDENT? A Manual of Birth-Control. By Michael Fielding. Preface by H. G. Wells. Revised and Enlarged Edition. London: Noel Douglas. 1930. Price Cloth 3/6; Paper 2s.

Quite recently the first of the really scientific and satisfying books on the technic of birth control made its appearance, and this has been followed by others, more or less complete and detailed.

This small volume covers the ground in a highly satisfactory manner, including the argu-

ments for and against contraception; its medical and sociologic aspects; and a full explanation of several of the methods which experience has shown to be reliable, reasonably fool-proof and esthetically admissible. Of course, contraception is for more or less civilized beings, and savages, in white skins or brown, will never profit by such teachings.

Here is a little book, at a reasonable price, which will save any reasonably intelligent woman from the tragedy of involuntary motherhood, and which uninstructed physicians can read with profit and recommend to their patients with entire confidence.

Talbot: Epilepsy

TREATMENT OF EPILEPSY. By Fritz B. Talbot, M.D., Clinical Professor of Pediatrics, Harvard University Medical School; Chief of Children's Medical Department, Massachusetts General Hospital. New York: The Macmillan Company. 1930. Price \$4.00.

It is said that there are at least half a million epileptics in the United States. Such a common and widespread disease demands the attention of every practitioner and it behooves him to be acquainted with whatever is known regarding its general and particular etiology and the newer developments of its treatment.

Dr. Talbot's book is one of the *Macmillan Medical Monographs*, and deals especially with the treatment of epilepsy; it continues the general study of this condition by Lennox and Cobb in one of the previous monographs of this series, and is based on research in the Massachusetts General Hospital.

Of the two sections which make up the work, the first deals with generalities; the second, the more interesting to the clinician, discusses the metabolic factors and gives summaries of the various dietetic treatments of epilepsy, especially of the ketogenic diet, which the author apparently believes has been more successful than any other method of handling epileptics and controlling the seizures.

The author believes that the ketogenic diet method of treatment has been used with success for a sufficiently long time now to justify its classification among the important new methods of treatment, especially for epilepsy in children.

The book is clearly printed on good paper and there is an extensive bibliography of references at the end.

General practitioners will find here a broad-minded and clear exposition of the various phases of the important subject dealt with.

Webster: Legal Medicine and Toxicology

LEGAL MEDICINE AND TOXICOLOGY. By Ralph W. Webster, M.D., Ph.D., Late Clinical Professor of Medicine (Medical Jurisprudence) in Rush Medical College, University of Chicago. Illustrated. Philadelphia and London: W. B. Saunders Company. 1930. Price \$8.50.

It is essential that every practitioner should be fairly well acquainted with the main facts of medical jurisprudence; not only for his own pro-

tection, because cases constantly arise in his own practice in which such knowledge is indispensable, but also because he may at any time be called to testify in a court of justice as a medical expert.

Dr. Webster's textbook is well suited to meet the needs of the American physician and medical students. It discusses medico-legal matters from the point of view of the laws of the various states. It is concise, presenting the necessary particulars, but avoiding redundancies. It is well and clearly written and every chapter gives evidence of wide reading, consultation of authoritative literature and of a well-balanced discrimination in estimating the points at issue. Finally the matter is up-to-date.

The work consists of two main parts: Part I deals with legal medicine proper, covering the aspects of death from various causes, pregnancy, abortion, rape, etc. The legal rights and obligations of physicians are included in this part.

Part II covers toxicology. This part of the work is necessarily more extensive than the first, owing to the variety of poisons and poisonous compounds due to the extension of modern chemistry and the application of chemical processes in industry and the modern life. The chapters on alkaloidal and non-alkaloidal organic poisons are especially well written and contain a great deal that is entirely new and not found in other books on the subject.

The volume is handy, it is clearly printed and amply indexed and it should find a place in every practitioner's book shelves, as a standard and modern exposition of legal medicine.

Wyatt: Arthritis and Rheumatism

CHRONIC ARTHRITIS AND RHEUMATOID AFFECTIONS WITH RECOVERY RECORD. By Bernard Langdon Wyatt, M.D., F.A.C.P., Director, The Wyatt Clinic; Member Editorial Staff of "Acta Rheumatologica" of the International League Against Rheumatism; etc. With the Collaboration of Louis I. Dublin, Ph.D., Statistician, The Metropolitan Life Insurance Company, New York. And Foreword by Dr. J. Van Breemen, Honorary Secretary and Director of Advisory Bureau, The International League Against Rheumatism, Amsterdam, Holland. New York: William Wood and Company. 1930. Price \$2.50.

Though much difference of opinion exists in regard to the precise etiology of arthritic and rheumatoid affections, the clinical fact remains that these diseases are widespread and form one of the most important items in national morbidity and mortality.

Dr. Wyatt's book deals with the chronic types of these diseases. He discusses the incidence, prevention and the various methods of treatment. The multifactor conditions under the general headings are shown to be of mechanical, chemical or bacterial origin.

The author is of the general opinion that the great majority of these chronic cases can be cured—especially if the patient persists in co-operation and exerts a strong will power—by physical therapy measures, including sunlight baths. But it is a matter of long-continued treatment, with restricted diets and avoidance of causes which lead to exacerbations.

While admitting their value, the author is cautious regarding the use of vaccines and foreign proteins in cases of chronic arthritic and rheumatic disease. He believes that they are efficacious as a supplement to the drainage of foci of infection.

The general practitioner will find much in this monograph which will help him to treat these difficult patients successfully.

Bailey: Emergency Surgery

EMERGENCY SURGERY. By Hamilton Bailey, F.R.C.S. (Eng.), Late Surgeon, Dudley Road Hospital, Birmingham; Assistant Surgeon, Liverpool Royal Infirmary and Surgical Registrar, London Hospital. Volume 1: Abdomen and Pelvis. With 324 Illustrations, Some of Which Are in Colour. New York: William Wood and Company. 1930. Price \$8.00.

Accidents occur in the best regulated surgical operations; the technic may be without a flaw but the personal equation of the patient has a large number of variables.

What is the right thing to do when some unexpected development occurs during or following a surgical operation? This is what Dr. Bailey undertakes to answer in these two volumes, his data having been gleaned from many sources, from his own experience, from that of those at whose operations he assisted and from carefully compiled case reports.

There is no doubt that the young surgeon (and for that matter the experienced one) can gain a vast amount of valuable help from this work. Almost every chapter contains some point that can be applied in common practice—matters that are never described in ordinary surgical textbooks.

Volume I deals with the emergencies of operations in the abdomen and pelvis, including the genito-urinary organs. There are 21 chapters, covering the different regions and emergencies. From so much that is excellent it is hard to discriminate, but the management of intestinal obstructive emergencies appears to be particularly well handled.

The text is clearly printed and well arranged for reference. The illustrations are clarifying and helpful and there is a good index.

Altogether, the work may be recommended to all who have to do with surgical operations, so that tried methods of dealing with emergencies may be at hand.

Davidson: Lung Cancer

CANCER OF THE LUNG AND OTHER INTRA-THORACIC TUMOURS. By Maurice Davidson, M.A., M.D., B.Ch.(Oxon.), F.R.C.P. (Lond.), Physician To The Brompton Hospital for Consumption and Diseases Of The Chest, and Dean Of The Brompton Hospital Medical School; etc. With A Foreword By Arthur J. Hall, M.A., M.D., D.Sc., F.R.C.P., Professor of Medicine In the University of Sheffield. New York: William Wood and Company. 1930. Price \$5.50.

In the United States, primary cancer of the lung is not observed frequently. In 1927, within the registration area, there were 2,012 deaths

with this pathologic diagnosis. Nevertheless, such statistics as are available show a constantly increasing incidence here, similar to that seen in Europe. German statistics show that, in the period 1912-1923, the incidence was about fourteen times that of the period 1889-1899. This may, of course, be due to the more accurate methods of diagnosis—roentgenology for instance.

In this monograph the author's aim has been to collect, so far as possible, the essential facts in regard to primary malignant disease of the lung and other intrathoracic tumors, and arrange them in such a way that they would give an intelligible picture of the condition to the practicing physician. The pathologic and the diagnostic features are especially stressed, the latter being fairly full, and illustrated with numerous radiographs.

The chapter dealing with the clinical aspects is enriched with a number of exemplary case reports, some of which are accompanied with histologic microphotographs of the diseased lung tissues.

Only an outline of treatment is given. Within the past decade or so, the technic of intrathoracic surgery has so advanced that it is now as safe as abdominal surgery, in the hands of experts. However, it cannot be said at the present moment that there is much hope, other than for palliation, for the patient with primary lung cancer.

The book is one for the clinician, and especially for the specialist on diseases of the chest. The printing and general book work are excellent.

Elmer & Rose: Physical Diagnosis

PHYSICAL DIAGNOSIS. By Warren P. Elmer, B.S., M.D., Associate Professor of Clinical Medicine, Washington University, School of Medicine; Assistant Physician to Barnes Hospital, etc., and W. D. Rose, M.D., Late Associate Professor of Medicine in the University of Arkansas, Little Rock, Arkansas. With three Hundred Thirty-Seven Illustrations. St. Louis: The C. V. Mosby Company. 1930. Price \$10.00.

This volume is a revised and much amplified issue of a work on the same subject by Dr. Rose. The new book is divided into two main divisions.

Part I, on the technic of physical examinations, is devoted to subject matter which has been found useful in the teaching course in normal physical diagnosis. Each diagnostic procedure is fully discussed in one or more sections. The authors stress the need of inspection of the whole body before regional investigations by palpation, etc. They also suggest demonstrations by specialists in eye, ear, nose and throat, as special technics are needed here.

While the various procedures described are primarily intended to be carried out in large clinics and for the instruction of students yet, owing to the rapidly increasing practice of periodic health examinations, many useful hints may be obtained by the general practitioner, in distinguishing between normal and the pathologic conditions.

Part II is devoted to the physical diagnosis of diseases of the respiratory and circulatory sys-

tems. The diagnostic helps include the latest advances in roentgenologic and cardioelectrographic methods, with numerous clinical and autopsical illustrations.

This textbook should be used as a supplement to clinic and bedside teaching and is well suited for this purpose.

A word should be said regarding the profuseness and excellence of the illustrations, not merely because they are, medically speaking, pictorial, but because they really fulfill their purpose of giving a correct visual impression. There is also an ample index.

The bookwork is very satisfactory.

Wright: Primer of Erotology

THE SEX FACTOR IN MARRIAGE. A book for those who are or are about to be married. By Helena Wright, M.B., B.S. With an Introduction by A. Herbert Gray, M.A., D.D. London: Noel Douglas 1930. Price 3 s. 6d.

It is only within this generation that the art of love has begun to receive attention in the literature of the English language, although it has figured largely in the writings of India and Arabia for hundreds of years.

Rather recently, several worth-while books on the subject have appeared, most of which are rather expensive and hard to come by, and many of which go into sufficient detail to be somewhat shocking to people (especially women) who have been brought up in the paralyzing traditions of Victorian prudery.

Here is something that has been needed—a short, simple, direct primer of erotology, sufficiently elementary to be within the range of anyone with a high-school education; sufficiently explicit to be really helpful to beginners in the study of this oldest and most humanly important of arts, but with no trace of either prurience or Comstockism; and cheap enough so that almost anyone can afford to own a copy.

Physicians who have the welfare of their patients at heart will do well to recommend or give this little book to the young married couples among their clientele and to those about to be married. Many of them will derive large profit from studying it themselves, as it will help them to give sound and helpful advice in many of those perplexing cases which need assistance urgently, but in which the uninstructed physician is so pitifully helpless.

Sutton: The Long Trek

THE LONG TREK. Around the World with Camera and Rifle. By Richard L. Sutton, M.D., Sc.D., LL.D., F.R.S. (Edin.), Fellow of the Royal Geographical Society; Member of the French Geographical Society; Professor of Dermatology, University of Kansas. With more than two hundred illustrations from photographs made by the author and by Richard L. Sutton, Jr., A.M., B.Sc., M.D. Fellow of the Royal Geographical Society. St. Louis: The C. V. Mosby Company. 1930. Price \$5.00.

When Dr. Richard L. Sutton, Jr. reached his majority, his father, the eminent physician, author and sportsman, gave him a "birthday

party" which took them, by way of Europe and the Mediterranean and Red seas, to Tanga and Mombasa on the eastern coast of Africa; inland for months of big game hunting—with camera as well as gun; then to Indo-China for tiger shooting; and finally up to China and Japan and back across the Pacific to complete "The Long Trek."

In this volume, Dr. Sutton, Sr., tells in his own fascinating and humorous style of their adventures, principally on game trails in Africa. But, keenly observant, he writes entertainingly of people and countries as well as of animals. His comments on native health, diseases and living conditions will be of especial interest to physicians.

A chapter on "Kiswahili" (the common language of East Africa), in which are given a vocabulary and the rudiments of grammar, and one on "The Wambulu People" are contributed by the author's son.

Special attention should be called to the profuse and excellent illustrations, all of which were made from photographs by the Doctors. A double-page sketch map of their excursions into Africa is helpful in following the text.

The book is well printed on glossy paper, and the binding is sound and attractive.

To one planning a similar trip, this volume should prove invaluable in the wealth of material it contains concerning equipment, the best methods of transportation, the organization and management of a safari, and where the best hunting may be obtained.

But simply as a book to be thoroughly enjoyed, it is recommended to all who love tales of adventure.

M. L. C.

Gubb: Algiers and Algeria

FROM CLOUD TO SUNSHINE; Notes on Algiers and Algeria as a Winter Resort. By Alfred S. Gubb, M.D., Diplomat in Public Health. Tenth Edition. Alger, Imprimerie Algérienne. Price 3/6.

A chatty little book, well and profusely illustrated, concerning Algiers and Algeria. Its principal interest to the medical profession lies in the value of the region as a winter resort. There are also some medical notes regarding the neighbouring province of Tunis.

Meyer-Burgdorff & Schmidt: The Operated Stomach

DER OPERIERTE MAGEN. Von Prof. Dr. Hermann Meyer-Burgdorff und Dr. Walter Schmidt, Göttingen. Mit 146 Abbildungen. Leipzig: Georg Thieme, Verlag. 1930. Price M. 9.60 Geb M 11.—

This monograph is devoted to the clinical and roentgenologic findings in the investigations of patients who have been subjected to various stomach operations, especially gastroenterostomy and resection. The functional disturbances to which such patients are liable are detailed. The internist who reads German should find this work of great clinical value.

MEDICAL NEWS



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General Kennedy Passes

Brigadier General James M. Kennedy, Medical Corps, Retired, passed to his rest Oct. 15, 1930, at Lettermann General Hospital, San Francisco, of which institution he had been commandant for several years, before he was made Assistant Surgeon General, in 1926, assuming command of Walter Reed General Hospital, Washington, D. C.

General Kennedy, who was retired at the age limit in December, 1929, was one of the Army's experts on hospital administration.

Theelin, The Crystalline Female Sex Hormone

The name Theelin has been selected for the new crystalline, follicular, ovarian hormone developed by the author and associates.—DR. E. A. DOISY, in *J. Biol. Chem.*, June, 1930.

Medical Journal Combination

Beginning with the January, 1931, issue, the *Medical Times* and the *Long Island Medical Journal* will be combined, under the names of the two publications, and will remain the organ of the Associated Physicians of Long Island. The consolidated journal should prove interesting and helpful.

Death of Prof. Eijkman

Dr. Christian Eijkman, professor of hygiene in the University of Utrecht, Holland, the man who first demonstrated the production of disease (beriberi) by faulty diet, thus opening the way for modern studies of vitamins, passed to his rest recently, at the age of 72 years.

Methanol

It will be well for physicians to remember that the chemical substance now generally called methanol, is none other than methyl (wood) alcohol, under another name, and is, as it always has been, a dangerous poison, for which there is no known antidote.

Commonest Causes of Death

The chances are two to one that any person now living will die from one of the following eight causes, whose death rates stand in the order named: Heart disease, cancer, pneumonia, nephritis, cerebral hemorrhage, accidents, tuberculosis, hazards of infancy. The rates for heart disease and cancer are 210 and 96 per 100,000 respectively.

Journal of Clinical Pathology

Dr. T. B. Magath, of the Mayo Clinic, has accepted appointment as editor-in-chief of the new official journal of the American Society of Clinical Pathologists, to be known as the *American Journal of Clinical*

Pathology, of which the first number will be issued in January, 1931.

The new journal will emphasize new methods in laboratory work, the material being primarily of a practical and clinical nature. It is designed to be useful and serviceable to the technician as well as to the pathologist. For the present the journal will be published bimonthly.



Miss Pauline Lodge, Lakewood, O., receiving the first award in the second contest from President Hoover. Chas. R. Walgreen, Jr., son of the donor of the prizes, stands at the left.

Gorgas Essay Contest

The third annual Gorgas Memorial Essay Contest is now open to high school students all over the country. Prizes are awarded to local, state and national winners, the first national prize being \$500 in cash, plus \$250 to pay for a trip to Washington to receive the award from the President; the second prize is \$250; and the third, \$100.

Physicians will do well to bring this contest to the attention of the young people of their acquaintance, who may obtain full particulars from the Gorgas Memorial Institute, 1331 G Street, N. W., Washington, D. C.

The Cooper Bill Again

Most thoughtful physicians are convinced that the Sheppard-Towner law was an unwarrantable piece of paternalistic legislation, interfering with the practice of medicine, and producing no valuable results. The termination of its authority is a blessing.

But, like Banquo's ghost, it will not stay dead while there are politically minded ladies—chronic “fixers,” of other people, who profit by its operation—to resuscitate it.

The Cooper Bill (H. R. 12995) is now in committee and its proponents are clamoring for prompt action. The bill reads very plausibly, but the joker is in Section 5, where it says that no state can procure any benefits under this bill unless it has accepted the provisions of the Sheppard-Towner law.

Physicians who have the welfare of the country and of their profession at heart should write or wire, at once, to their congressmen, requesting them to vote against this bill when it appears on the floor of Congress.

United States Civil Service Examinations

The United States Civil Service Commission announces the following-named open competitive examinations:

Medical Officer

Associate Medical Officer

Assistant Medical Officer

(General Medicine and Surgery)

Applications for the above-named positions will be rated as received by the U. S. Civil Service Commission at Washington, D. C., until June 30, 1931.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the Secretary of the United States Civil Service Board of Examiners at the post office or custom-house in any city.

Send For This Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physician's supplies, foods, etc., CLINICAL MEDICINE and SURGERY, North Chicago, Ill., will gladly forward request for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is

to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

When requesting literature, please specify whether you are a doctor of medicine, dentistry, medical student, a registered pharmacist, or a nurse.

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| <p>J- 3 Storm Binder and Abdominal Supporter. 4-page folder by Dr. Katherine L. Storm.</p> <p>J- 45 Vera-Perles of Sandelwood Comp. Paul Plessner Co.</p> <p>J- 47 Campho-Phenique in Major and Minor Surgery. Campho-Phenique Company.</p> <p>J- 95 Everything for the Sick. Lindsay Laboratories.</p> <p>J-116 Hemo-Glycogen, The New Product Hemoglobin Compound and Liver Extract. Chappel Bros., Inc.</p> <p>J-120 Building Resistance — Guiatonic. William R. Warner & Co., Ltd.</p> <p>J-156 Siomine (Methanamine Tetraiodide). Pitman-Moore Company.</p> <p>J-196 "Facts Worth Knowing." Intravenous Products Co. of America, Inc.</p> <p>J-244 I Am Oxiphen. Pitman-Moore Co.</p> <p>J-258 Prophylaxis. August E. Drucker Co.</p> <p>J-269 Special Course No. VI Traumatic Surgery. Illinois Post Graduate Medical School, Inc.</p> <p>J-271 The Intestinal Flora. The Battle Creek Food Company.</p> <p>J-292 Acidosis and Infection—Alka Zane, William R. Warner & Co., Inc.</p> <p>J-310 Conclusions from published research of the value of Ceanothyn as a hemostatic. Flint, Eaton & Co.</p> | <p>J-318 Blood Clinical and Laboratory Diagnosis. A book of 160 pages by Henry Irving Berger, M.D., Battle & Company.</p> <p>J-347 Graphic Chart of the Treatment of Circulatory Disturbances. Merck & Company.</p> <p>J-354 Getting the Most Out of Life. Stanco, Inc.</p> <p>J-374 Table for Determining Date of Delivery. The Viburno Company, Inc.</p> <p>J-383 Syrup Histosan Controls the Cough in Acute and Chronic Bronchitis, Pneumonia and other Pulmonary Diseases. Ernst Bischoff Co., Inc.</p> <p>J-391 Imhotep. Egyptian Medicine Was a Quaint Mixture of Rationalism and Magic — Agarol. William R. Warner & Co., Inc.</p> <p>J-392 Arthritis. Its Classification and Treatment. Battle & Co.</p> <p>J-401 When the Cross Roads are Reached in Hemorrhoids (Piles). Schering & Glatz, Inc.</p> <p>J-402 The First Question—Agarol. Wm. R. Warner & Co., Inc.</p> <p>J-404 Urotropin, the Intravenous Administration of the Original Formaldehyde-Liberating Urinary and Systemic Antiseptic. Schering & Glatz.</p> <p>J-410 Acidosis. A Warning Sign in Pregnancy—Alka-Zane. Wm. R. Warner & Co., Inc.</p> |
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- J-412 The New Colloidal Antacid. The Wander Co.
- J-414 Laboratory Test in Pictures—Silvogon. Ernst Bischoff Company, Inc.
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- J-418 Diphtheria Can Be Kept From Your Family by Protective Immunization. The National Drug Co.
- J-424 When Chemists Turned from Gold to Drugs, Pantopon, Roche. Hoffman-La Roche, Inc.
- J-425 Cerebrospinal Fever (Epidemic, Cerebrospinal Meningitis, Meningococcic Meningitis, Spotted Fever), Symptoms and Specific Treatment with Anti-Meningococcic Serum. The National Drug Co.
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- J-485 New Oscillatory Currents for Low Tension Technique. McIntosh Electrical Corporation.
- J-486 Encyclopedic Diagnosis of Diseases of the Liver and Biliary System by Henry I. Berger, M.D. Peacock Chemical Co.
- J-488 New Thoughts on Digitalis Action and Dosage. Upsher Smith Co.
- J-489 Light Therapy in Modern Hospital Procedure. The Burdick Corporation.
- J-490 Are Your Patients All At Sea? Detoxol Paste. The Wm. S. Merrell Company.
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- J-493 A Gilt Edge Investment. The Keeley Institute.
- J-494 The Hormone. The Harrower Laboratory, Inc.
- J-495 Iodine Prescription Specialties (Burnham's). Burnham Soluble Iodine Co.
- J-496 Natural Salicylates. The Wm. S. Merrell Company.
- J-497 Angostura. J. W. Wuppermann Agency, Inc.
- J-498 Syphilis, Colloidal Mercury Sulphide-Hille in Wassermann Fastness. Hille Laboratories, Inc.
- J-499 The Therapeutic Action of Colloidal Mercury Sulphide (Hille) and of Other Colloidal Heavy Metal Sulphides in Syphilis Experimentally Produced in Rabbits. Hille Laboratories, Inc.